

# Defense Environmental Restoration and Waste Management

## Proposed Appropriation Language

For Department of Energy expenses, including the purchase, construction and acquisition of plant and capital equipment and other expenses necessary for atomic energy defense environmental restoration and waste management activities in carrying out the purposes of the Department of Energy Organization Act (42 U.S.C. 7101 et seq.), including the acquisition or condemnation of any real property or any facility or for plant or facility acquisition, construction, or expansion; and the purchase of [passenger motor vehicles (not to exceed 3 new sedans and 6 for replacement only, of which 3 are sedans, 2 are buses, and 1 is an ambulance, \$4,310,227,000] *35 passenger motor vehicles for replacement only, \$4,514,376,000, to remain available until expended of which \$8,700,000 shall be derived from excess pension payment refunds. Further, for the foregoing purposes, \$4,505,676,000, to become available October 1, 2000, and to remain available until expended. (Energy and Water Development Appropriations Act, 1999.)*

## Explanation of Change

Change in appropriation language relates to the number of motor vehicles, and provides for two years of appropriation.

# **Environmental Management**

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# **Environmental Management**

## **Executive Budget Summary**

The Department of Energy's (DOE) Environmental Management (EM) program is requesting \$5.700 billion of traditional budget authority and \$228 million of privatization funding, for a total Fiscal Year (FY) 2000 budget request of \$5.928 billion. The traditional budget authority request consists of \$4.494 billion under the Defense Environmental Restoration and Waste Management appropriation, \$1.055 billion under the Defense Facilities Closure Projects appropriation, \$331 million under the Non-Defense Environmental Management appropriation, and \$240 million under the Uranium Enrichment Decontamination and Decommissioning Fund appropriation. This request is offset by \$420 million for the Federal Contribution to the Uranium Enrichment Decontamination and Decommissioning Fund. With this level of funding, EM will be substantially in compliance with applicable environmental and other requirements. The structure of the EM budget continues to be based on the grouping of activities into projects at the various Departmental sites, a crucial step in accelerating work and lowering the cost of carrying out the EM mission.

### **I. EM FY 2000 Budget Request**

The Environmental Management program has developed a budget request of \$5.700 billion for FY 2000 for traditional budget authority. This request represents an increase of approximately \$100 million over the current appropriation of \$5.604 billion for FY 1999. This provides sufficient funding to be substantially in compliance with agreements and requirements, address most planned Defense Nuclear Facilities Safety Board recommendations, address known significant safety risk issues, develop cost- and schedule-reducing alternative cleanup technologies, and accelerate the closure of EM sites.

The FY 2000 budget request will enable the EM program to continue towards the fulfillment of the vision of closing as many sites as possible by 2006. This request fully reflects the project-oriented structure that EM has developed as a key component of its strategy to accelerate cleanup and reduce costs. It includes a brief description of each project, the budget authority requested for the project, and the performance metrics that will be used to measure the progress of the project. In accordance with the Government Performance and Results Act, these performance measures also reflect the linkage between the EM budget and the program's goals and objectives as stated in the Department of Energy's Strategic Plan, the commitments for FY 2000 in the DOE Annual Performance Plan, and the commitments in the Secretary's Performance Agreement with the President. The requested funds for Science and Technology activities are consistent with the EM Research and Development Program Plan which 'maps' investments in solutions to site-identified needs. EM's Science and Technology program represents approximately two-thirds of DOE's Environmental Quality Business Line Research and Development Portfolio.

In addition to the request for traditional budget authority, EM is requesting \$228 million in the Defense Environmental Management Privatization account for FY 2000. This funding will enable EM to continue on schedule with the following privatization activities:

- # Tank Waste Remediation System, Phase I, at Richland
- # Advanced Mixed Waste Treatment Project at Idaho
- # Spent Nuclear Fuel Dry Storage Project at Idaho
- # Transuranic Waste Treatment Project at Oak Ridge
- # Environmental Management/Waste Management Disposal Facility at Oak Ridge

The following table is a summary of EM's FY 2000 budget request compared to the FY 1998 and FY 1999 appropriated levels.

## EM FY 2000 Budget Request

(dollars in thousands)

	FY 1998 Current Appropriation	FY 1999 Current Appropriation	FY 2000 Request
Albuquerque .....	316,734	202,541	202,600
Carlsbad .....	173,700	185,404	186,404
Chicago .....	49,776	54,063	54,100
Idaho <sup>a</sup> .....	415,556	435,642	409,422
Nevada .....	68,918	80,081	85,307
Oakland .....	95,467	86,808	86,850
Oak Ridge .....	547,258	501,561	530,561
Ohio .....	486,272	497,928	512,928
Richland .....	951,397	998,492	1,065,111
Rocky Flats .....	632,100	657,200	657,210
Savannah River .....	1,127,923	1,214,946	1,222,500
Multi-Site .....	113,053	85,542	77,098
Program Direction .....	345,000	337,073	349,409
Science & Technology .....	269,213	243,156	230,500
D&D Fund Deposit .....	388,000	398,088	420,000
Ur/Th Reimbursement .....	40,000	30,000	30,000
Subtotal, EM .....	6,020,367	6,008,525	6,120,000
Use of Prior Year Balances .....	-11,253	-20,658	0
Y2K Supplemental Appropriation .....	0	13,840	0
FFTF (transferred to NE in FY 99) .....	41,727	0	0
D&D Fund Offset .....	-388,000	-398,088	-420,000
Total, Traditional Budget Authority .....	5,662,841	5,603,619	5,700,000
Privatization .....	200,000	228,357	228,000
Total, EM <sup>b</sup> .....	5,862,841	5,831,976	5,928,000

## II. Background: Cleanup Challenges and Vision for the Future

Over the past five decades, DOE and its predecessor agencies developed the largest government-owned industry in the United States, responsible for the research, development, testing, and production of

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<sup>a</sup> The Idaho program for FY 2000 also includes the use of \$43 million in prior year balances for Pit 9 activities, for a total program level of \$452.422 million.

<sup>b</sup> Excludes funding appropriated or requested under EM, but managed by EH for health studies activities (\$12.0 million in FY 1999 and \$20.0 million in FY 2000).

nuclear weapons, as well as a variety of nuclear-related research projects. When most nuclear weapons production operations ceased in the late 1980's, DOE created the EM program to manage the thousands of contaminated areas and buildings, huge waste volumes, and nuclear materials left over from the nuclear weapons production process. EM's responsibilities include facilities and areas at 113 geographic sites (excluding the 21 sites in the Formerly Utilized Sites Remedial Action Project transferred to the U.S. Army Corps of Engineers). These sites are located in 30 States and one territory, which occupy an area equal to that of Rhode Island and Delaware combined -- about 2 million acres.

In addition to EM's responsibilities for environmental remediation, decommissioning of facilities, and the storage, treatment, and disposal of nuclear and hazardous wastes, EM is responsible for the safe management of approximately 18 metric tons of plutonium metal and oxides and residues. Plutonium can spontaneously ignite in contact with air in certain circumstances, so careful handling and storage safety is required. Because of its potential use in nuclear weapons, plutonium must also be stored in a manner to prevent theft or diversion. Thousands of metric tons of highly radioactive spent nuclear fuel, a by-product of the Department's weapons production process, are also under EM's care. Some of this spent fuel is corroding in its current storage. Further, EM is managing the return of foreign research reactor spent nuclear fuel from a number of different nations to meet key non-proliferation goals of the United States. EM's goals in meeting these responsibilities are to reduce urgent risks to human health and the environment, meet crucial national non-proliferation goals, manage the long-term contamination and safety threats, and reduce program costs.

In June 1996, to reconcile the pressing need to stabilize spending levels in the short term, while reducing both economic and environmental liabilities over the long term, EM established a vision for the program:

*By 2006, the Environmental Management program intends to complete cleanup at most of its 53 remaining sites. At the 10 remaining sites, including our five largest sites, treatment will continue for the remaining "legacy" waste streams. This vision will drive budget decisions, the sequencing of projects, and the actions needed to meet program objectives. This vision will be implemented in collaboration with stakeholders, regulators, and Tribal Nations.*

Accelerating cleanup and project completion is a central goal of the EM program. Accelerating cleanup can reduce both short-term and life-cycle program costs and is necessary to demonstrate progress towards the completion of the EM mission. As of the end of FY 1998, cleanup had been completed at 65 of the 113 geographic sites in the EM program, leaving 48 to be completed.

Even after completing cleanup, EM will maintain a presence at most sites to monitor, maintain and provide information on the contained residual contamination. These activities are designed to maintain long-term protection of human health and the environment. Such long-term stewardship will include passive or active institutional controls and, often, treatment of groundwater over a long period of time. The extent of long-term stewardship required at a site will depend on the end state reached at that particular site. Each site's end state will be determined after consultation among DOE and other representatives of the Administration, Congress, Tribal Nations, representatives of regulatory agencies, and state and local authorities, representatives of non-governmental organizations, and interested members of the general public.

### III. FY 2000 Budget Strategy/Priority

For the past several years, Congress has appropriated relatively stable traditional budget authority for the EM program at a level of approximately \$5.6 billion. Over this same period, due to the decline in EM program uncosted carryover balances, actual expenditures for the program have declined from a high of \$6.8 billion in FY 1996 to a projected \$5.6 billion in FY 1999. Program requirements, however, have not been declining or stabilizing in a commensurate manner. For example, the sites' *Accelerating Cleanup: Paths to Closure* submissions indicate over 500 environmental problems for which new technology is needed in order to accomplish cleanup. The most recent life-cycle cost analysis of the EM program, as well as several programmatic issues that have arisen during the execution of the budget in FY 1998 and FY 1999, indicate that additional traditional budget authority, substantially above current levels, may be needed to address emerging issues and requirements.

The budget of the EM program is constrained by the Balanced Budget Agreement between the President and the Congress. The EM program is committed to living within these constraints. Accordingly, the EM program is committed to accommodating these emerging issues and requirements within the requested level of \$5.7 billion for traditional budget authority. In a number of instances, this will require improved program efficiency, a reprioritization of current work, and/or adjusting funding profiles. EM intends to work with the Congress, regulators, the Defense Nuclear Facilities Safety Board, stakeholders, and Tribal Nations to address issues that may arise.

In developing the FY 2000 budget request, the Department's Chief Financial Officer established a "peer review" team, which consisted of representatives from five EM sites, EM Headquarters, and the Office of the Chief Financial Officer, to review the field EM budget submissions. The purpose of this review was to categorize the EM activities within the sites' budget requests in a consistent manner across the DOE complex in terms of the reason, or "driver," that funding was being sought for each project. The peer review proved useful in ensuring that all EM activities were characterized in a similar manner during the budget-building process. Accordingly, EM intends to use a similar process for building the budget request for FY 2001. EM will use the same matrix of drivers that the peer review team developed to categorize activities for the FY 2001 budget, and will share the categorization of each activity with regulators, stakeholders, and Tribal Nations.

The following are major principles and strategies that are the foundation for the EM program in FY 2000:

- # Address serious risks
- # Maintain compliance
- # Accelerate cleanup and reduce costs
- # Ship transuranic waste to the Waste Isolation Pilot Plant in Carlsbad, New Mexico
- # Utilize privatization initiatives where appropriate
- # Integrate waste and materials management
- # Continue to make the EM program more efficient
- # Accelerate deployment of technologies and invest in science
- # Stabilize the Federal workforce
- # Implement an Integrated Planning, Accountability and Budgeting System for EM
- # Work with regulators, stakeholders, and Tribal Nations

## **A. Address Serious Risks**

The Department is committed to ensuring its facilities and activities pose no undue risks to the public and worker health and safety. The FY 2000 budget request provides sufficient funding to accomplish this goal, as well as to reduce the most serious environmental risks across the DOE complex. These include maintaining the safe containment of high-level waste stored in tanks at Hanford, Washington; stabilizing plutonium at Hanford, Washington, Rocky Flats, Colorado, and Savannah River, South Carolina; and ensuring the safe storage of spent nuclear fuel at Hanford, Idaho, and Savannah River.

## **B. Maintain Compliance**

At the FY 2000 total budget request of \$5.928 billion (including privatization), EM will have sufficient funding to be substantially in compliance with applicable environmental and other requirements. At some sites, there may be a gap between compliance requirements and the work that is expected to be accomplished. EM is striving for additional efficiencies and other measures to close this gap. EM will continue to work with regulators to address this issue. More specifically, EM will attempt to comply with all applicable requirements of Federal, State, and local statutes and regulations; permits, administrative orders, or judicial decrees; and enforceable milestones or schedules established in agreements negotiated between EM and regulators. If necessary, EM will close the gap by using funding available for other EM activities at each site, in accordance with the Department's reprogramming procedures. In addition, the EM program intends to meet commitments to the Defense Nuclear Facilities Safety Board. As the program resources continue to be fiscally constrained, innovation and close collaboration with Congress, regulators and stakeholders has been, and will continue to be, necessary to meet our compliance requirements in a practical and efficient manner. EM will work closely with regulators, the Defense Board, and others to achieve this objective. Additionally, the strategies identified in the following sections--accelerating cleanup, reducing costs, privatization, increasing efficiency, and accelerating deployment of new technologies--will help EM meet its compliance requirements in a more efficient and cost-effective manner.

## **C. Accelerate Cleanup and Reduce Costs**

The Department's strategy for accelerating cleanup is presented in the *Accelerating Cleanup: Paths to Closure* report that was released in June 1998. This report provides a project-by-project depiction of the technical scope, cost, and schedule required to complete work at the remaining DOE sites. DOE officials, stakeholders, regulators, Tribal Nations, and the Congress now have a comprehensive management tool that can aid the analysis of the challenges that we face. Through the strategies identified in the *Accelerating Cleanup: Paths to Closure* document, EM sites are working aggressively to reduce outyear costs by completing projects in the quickest, most efficient manner possible, thereby reducing life-cycle costs and schedules.

In order to more closely align the annual budget formulation process and the long-term strategies set forth in the *Accelerating Cleanup: Paths to Closure* process, all EM activities have been organized into "projects", which have a defined scope and end state. Project Baseline Summary documents describe these projects and include the following: scope, schedule, cost, compliance, safety and health, risk, performance metrics, and other data. The EM program budget accounts are



structured to reflect the 2006 vision, and the Project Baseline Summaries have been grouped into the appropriate budget accounts to be consistent with these goals.

The strategy in the *Accelerating Cleanup: Paths to Closure* document allows EM to formulate budgetary and policy strategies and goals in the context of impacts to life-cycle costs and schedules. The Department recognizes that there may be differences in any given year between the actual budget requests and the funding used for analytical purposes in the report. This difference is inevitable due to the dynamic nature of the budget formulation process.

The funding levels presented in *Accelerating Cleanup: Paths to Closure* and the EM budget differ due to the constraints on EM funding imposed by the Balanced Budget Agreement. Absent any budgetary constraints, these baseline requirements would total well over \$6 billion in traditional budget authority for FY 2000 and beyond. Part of the significant challenge in managing the EM program is to fit the baseline requirements within the current and expected funding levels. The strategies identified in the *Accelerating Cleanup: Paths to Closure* report to improve the program's efficiency and to reduce costs are critical to meeting this challenge.

*Accelerating Cleanup: Paths to Closure* will be updated annually. Annual updates of this report will reflect cleanup progress, advances in technologies, projected savings due to demonstrated enhanced performance, the effects of annual budget allocations, and changes in site end states. The next update to *Accelerating Cleanup: Paths to Closure* is planned to be completed in the summer of 1999.

In August 1997, the Secretary of Energy designated three sites -- Rocky Flats, Fernald and Miamisburg -- as pilot sites for accelerated closure. In support of the vision of accelerated cleanup and site closure, Congress in FY 1998 designated a new Defense Facilities Closure Projects appropriation to accelerate the closure of the Rocky Flats and Fernald sites. In FY 1999, this appropriation account was expanded to include all of the Ohio sites. The Department's FY 2000 budget request for Environmental Management continues to support these initiatives, and includes sufficient funding to accelerate the Rocky Flats and Ohio sites.

EM achieved a major milestone in FY 1998 which significantly contributes to the overall EM cleanup mission. In FY 1998, all Uranium Mill Tailings Remedial Action Surface Project remediation activities were completed. This brings to a close one of the Department's longest running and major environmental cleanup programs, which was authorized by Congress in 1978 and cost approximately \$1.5 billion, including \$100 million provided by the states involved. Under the Uranium Mill Tailings Remedial Action Surface Project, the Department completed remedial actions at 22 of the 24 originally designated sites, with two sites being delisted and their responsibility transferred to the state of North Dakota. The Project involved efforts with 11 States, 2 Indian tribes, and 23 communities. Cleanup was performed at over 5,300 vicinity properties located near the 22 designated Uranium Mill Tailings Remedial Action sites, and over 40 million cubic yards of material were remediated and nineteen long-term disposal cells were constructed. At most of these sites, groundwater contamination remains (and is being addressed by the Uranium Mill Tailings Remedial Action Groundwater Project) and the disposal cells must be permanently monitored and maintained. The completion of the Uranium Mill Tailings Remedial Action Surface Project marks a significant milestone in the Department's efforts to remediate the environmental legacy from the production of nuclear weapons. Just as mining and milling of uranium was the first step towards the production of nuclear weapons, the completion of the Uranium Mill Tailings

Remedial Action Surface Project represents the first step towards “closing the circle” of the environmental legacy from nuclear weapons production.

#### **D. Ship Transuranic Waste to the Waste Isolation Pilot Plant**

The Secretary of Energy notified Congress on May 13, 1998, that after two decades of development, the Waste Isolation Pilot Plant was ready for operations for transuranic waste disposal since all the Land Withdrawal Act disposal prerequisites had been completed. The start of disposal operations has been delayed pending resolution of the 1992 Permanent Injunction for shipping waste to the Waste Isolation Pilot Plant for the now canceled test phase. Also, on July 17, 1998, three lawsuits were filed against the Environmental Protection Agency over its decision to certify the Waste Isolation Pilot Plant for radioactive waste disposal operations. Within these constraints, the Department remains committed to doing all it can to meet its obligations for the cleanup of its sites. Disposal operations are expected to begin in FY 1999, provided the legal constraints have been resolved. The FY 2000 request assumes the initiation of disposal operations in FY 1999. The FY 2000 request will allow the Waste Isolation Pilot Plant to ramp-up to 14 shipments per week of waste from the waste generator sites and be on track to achieve 17 shipments per week by the end of December 2000. Once waste treatment, transportation, and disposal have been completed, the transuranic waste will be isolated, and the risks from storing transuranic waste at multiple sites across the country will have been eliminated.

#### **E. Utilize Privatization Initiatives Where Appropriate**

Privatization remains a key component of EM’s contracting strategy to meet cleanup challenges with declining resources. Essentially a form of fixed-price contracting, the objective of EM privatization is to reduce the cost of products and services by having the Government pay for products delivered in accordance with desired specifications (e.g., treated waste, waste disposed of, or soil remediated). Through open competition, market forces should establish the most efficient contractual price for a specified service or product while shifting some of the performance risk and incentives to the contractor. The selected contractor(s) will be responsible for and own development of technologies, equipment, and facilities necessary to deliver the end product or service. Whether privatization is the most appropriate contracting strategy for a particular site or activity is determined on a case-by-case basis.

In FY 2000, the EM program is requesting \$228 million for privatization projects, including continuation of the Tank Waste Remediation System for high-level waste treatment at the Hanford Site in Washington, the Advanced Mixed Waste Treatment and the Spent Nuclear Fuel Dry Storage projects at Idaho, and the Environmental Management/Waste Management Disposal Facility and the Transuranic Waste Treatment projects at Oak Ridge, Tennessee.

As provided in the National Defense Authorization Act for Fiscal Year 1998, contracts for EM privatization projects must meet the following criteria: be awarded on a competitive basis; require the contractor to construct or acquire any equipment or facilities required to carry out the contract; require the contractor to bear any of the costs of the construction, acquisition, and operation of such equipment or facilities that arise before the commencement of the provision of goods or services under the contract; and provide for payment to the contractor under the contract only upon meeting the performance specifications in the contract. The EM goal in utilizing this methodology is to gain an edge through best-in-class management capability, business strategies, technological

approaches, schedule enhancements, regulatory experience, and cost efficiencies. This type of project funding is widely used in the private sector to finance power plants and other major investments. The Department believes the privatization program is the most cost-effective approach for the selected projects.

EM plans to provide increased training for the Federal staff responsible for oversight of the privatization projects. EM will establish criteria for the approval of the contractor's selection of managers for privatization projects, and the managers selected will be reviewed against these criteria. Quarterly reviews of the major privatization projects, including the Hanford Tank Waste Remediation System project and the Idaho Advanced Mixed Waste Treatment project, will continue to be conducted.

EM developed the Tank Waste Remediation System to manage the radioactive waste in the large underground storage tanks at the Hanford Site in Washington. The tanks at Hanford are one of the most urgent environmental and public health risks under the Department's purview. Approximately 56 million gallons of waste containing approximately 240,000 metric tons of processed chemicals and 250 million curies of waste are currently being stored in 177 tanks. Treatment of this waste, to convert it into a more stable form, is the largest privatization initiative planned by EM.

The Advanced Mixed Waste Treatment project at the Idaho National Engineering and Environmental Laboratory will incinerate and solidify 65,000 cubic meters of transuranic waste located in retrievable storage. The contract has an option for treatment of up to 120,000 cubic meters of additional mixed wastes from around the United States.

The Spent Nuclear Fuel Dry Storage Project at the Idaho National Engineering and Environmental Laboratory will provide the capabilities to initiate interim dry modular storage of Spent Nuclear Fuel. The fuel currently resides in facilities at Idaho, various universities, and foreign research reactors. This project will place approximately 50 cubic meters of spent nuclear fuel (11% of the Idaho total) into dry interim storage prior to shipment out of the State of Idaho.

The Transuranic Waste Treatment project at the Oak Ridge National Laboratory in Tennessee will transfer remote-handled transuranic waste sludge from 13 different tanks into the eight storage tanks which are co-located in the Melton Valley area and which contain the majority of the waste sludge. In addition to sludge, the transuranic waste project includes approximately 500 cubic meters of remote-handled solids and approximately 1,100 cubic meters of contact-handled solids. All transuranic solids will be delivered to the private vendor for treatment, followed by disposal at the Waste Isolation Pilot Plant in New Mexico.

At the Oak Ridge Reservation in Tennessee, the Environmental Management/Waste Management Disposal Facility will consist of a disposal cell with ancillary facilities to support initial operations and an area for the potential development of future treatment, storage, and disposal facilities. The disposal cell will have a 1.1 million cubic meter capacity, be above-grade, and be a Resource Conservation and Recovery Act-compliant earthen structure with a robust, multi-component cap. Based on projected waste volumes and cell design assumptions, the disposal cell is estimated to require 60-70 acres, with a total facility footprint of 100-120 acres, including initial support facilities and an area reserved for future expansion.

## **F. Integrate Waste and Materials Management**

The EM FY 2000 budget request includes several key initiatives to substantially reduce mortgage and outyear costs by moving materials to other sites for interim storage pending final disposal. The EM program continues to formalize the baselines for each site, as well as integrate the baselines across sites for nuclear waste and materials. The Department has included funding in the FY 2000 budget request for the option of accelerating the movement of the non-pit plutonium from Rocky Flats to Savannah River two years earlier than previously planned, thus supporting Rocky Flats closure by 2006 rather than 2010. In this capacity, the Savannah River request, in conjunction with other Rocky Flats projects, could result in significant life-cycle cost savings. In FY 1999, the Department anticipates making decisions resulting from the Waste Management Programmatic Environmental Impact Statement, clarifying the number of low-level and mixed low-level waste treatment and disposal facilities that will operate around the complex. EM has developed initial disposition maps to show the pathways to move waste or materials from inventory/generation, through treatment or stabilization, to final disposition. EM has already opened discussions with representatives of affected States, through the National Governors' Association, on feasible and lower-cost options for disposal of mixed low-level and low-level waste.

## **G. Continue to Make the EM Program More Efficient**

The EM program is striving for ways to become more efficient and to do more with less. Drawing upon past experience, knowledge of practices in the private sector, experience of other government agencies, and analysis of the performance of its program, EM is seeking to improve its productivity in order to bridge the gap between planned available funding and resources needed to meet program goals. Many of these strategies are set forth in more detail in the June 1998 *Accelerating Cleanup: Paths to Closure* document.

In order to reduce support costs, EM has adopted a common methodology for tracking such costs. Using cost category definitions developed by the Financial Management Systems Improvement Council, the Department's Chief Financial Officer is tracking this information, broken out by cost category, fiscal year, and direct and indirect funding sources. By examining cost trends in each of these categories and benchmarking these costs at EM sites against similar costs in the private sector, EM can focus on measures to reduce specific support costs. Savings are being achieved and hopefully more areas can be reduced, so more funding is available for actual cleanup.

## **H. Accelerate Deployment of Technologies and Invest in Science**

The EM Science and Technology program has matured to the point where significant performance gains and cost savings, in the form of cost avoidance, can be achieved through aggressive deployment of the large number of currently and soon-to-be available technologies. In the *Accelerating Cleanup: Paths to Closure*, EM sites identified over 500 technology problems for which technological solutions can achieve schedule improvements prior to 2006 and produce significant cost savings. EM believes that technology development offers some of the program's best opportunities for substantial cost reductions. EM has implemented a Research and Development Program Plan that maps investments in solutions to site-identified needs to ensure work is being performed on the highest priority needs. This plan ensures our science and technology activities are planned and managed in an interactive, coordinated and participatory relationship with EM cleanup project managers and stakeholders.

EM has also identified those areas where innovative technologies will be needed to solve problems that are currently intractable or for which solutions will ultimately extend beyond a ten-year horizon. The EM Science Program, established in FY 1996, conducts a long-term basic research effort, in cooperation with the Department's Office of Science, that focuses on these long-term problems, such as subsurface contamination in the vadose zone and groundwater at the Hanford Site.

For FY 2000, the EM program is requesting \$230.5 million for the Science and Technology program. The Science and Technology program has expanded its role to encompass basic research through deployment.

## **I. Stabilize the Federal Work Force at Reduced Levels**

The EM program needs to have an adequate number of appropriately-skilled Federal employees in the field and at Headquarters. These employees are necessary to integrate and coordinate among sites to improve efficiency, oversee contractors to ensure cost-effective use of tax dollars, and respond to concerns and issues raised by the regulators, stakeholders, and tribes. In May 1995, as part of the Department's Strategic Alignment Initiative, targets were established for Headquarters staffing levels consistent with the National Performance Review objectives of decentralizing government agencies, putting more work in the field locations, and generally reducing the size of the Federal government. In May 1998, the Department issued revised staffing targets to address changing priorities across the complex and the continued emphasis on reducing the Federal workforce. As a result of this second round of allocations, EM's Strategic Alignment Initiative end-of-year on-board target was further reduced in both FY 1999 and FY 2000. The revised targets will result in a total EM workforce reduction of 490 full-time equivalents since FY 1996. Headquarters staff has been reduced 281 full-time equivalents (a 40 percent reduction since FY 1996) and the field staff has been reduced 209 full-time equivalents.

On November 20, 1998, Secretary Richardson announced the successful completion of the Strategic Alignment Initiative and the implementation of the next phase, Workforce for the 21st Century Initiative (Workforce 21). This will enable the Department to hire and retain personnel in key areas with skills and technical expertise that are critical to the success of the EM program, as well as other Department missions in national security, energy resources, and science and technology.

To manage and oversee a multi-billion dollar program, EM must be able to attract and retain personnel with the necessary environmental, financial, managerial, and technical capabilities. The reductions in personnel and funding over the last several years have resulted in the loss of a significant number of highly qualified people. Further reductions, as well as a continued inability to replace people with critical skills who depart, will adversely affect the Department's ability to effectively manage this program.

The FY 2000 budget request assumes a level of 2,724 full-time equivalents in support of the EM program. This level, consistent with Workforce 21, is sufficient to support stable staff levels necessary for effective and efficient management of the EM program. The following chart depicts the EM full-time equivalent staffing levels for Headquarters and the Field offices, by fiscal year.

## Full-Time Equivalent Allocations

(whole FTEs)					
	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000
Headquarters .....	706	579	438	435	425
Field Offices .....	2,508	2,475	2,344	2,329	2,299
Total, EM .....	3,214	3,054	2,782	2,764	2,724

Headquarters staff has been reduced through attrition, a buyout program, and the transfer of several programmatic functions and associated personnel to the field. The following chart depicts the field office staffing trends from FY 1998 through FY 2000.

## Federal Staffing Trends by Operations/Field Office

(whole FTEs)												
	AL	CB	CH	FE	ID	NV	OK	OR	OH	RL	RF	SR
FY 1998	145	56	107	66	240	56	70	140	223	494	257	490
FY 1999	134	61	110	65	239	55	72	139	223	508	247	476
FY 2000	129	61	106	51	236	53	69	133	224	535	242	460

### J. Implement an Integrated Planning, Accountability and Budgeting System for EM

EM is developing an Integrated Planning, Accountability and Budgeting System to document quantitative goals and performance metrics, track progress, and eliminate duplicative management and tracking systems, reviews, and reports. Under this system, the EM program has reorganized all activities (formerly tracked in about 1,000 activity data sheets) into more than 390 projects comprised of a group of similar or associated activities that will be tracked from the planning stage through budget formulation and execution. DOE believes that this management focus on projects will support the EM goal of completing cleanup as soon as possible, increase efficiency, reduce costs, and provide a more stable and understandable reporting structure, which is discussed in more detail in Section IV.

### K. Work with Regulators, Stakeholders and Tribal Nations

Public participation is a cornerstone of the EM program. By working cooperatively with regulators, stakeholders, and Tribal Nations, the EM program has improved its efficiency and been able to meet its regulatory requirements in a more efficient and cost-effective manner. EM has formally established a number of mechanisms for regular intersite dialogue and input into EM decision making on local and national issues. Among these mechanisms are the Environmental Management Advisory Board, Site-Specific Advisory Boards, and the State and Tribal Governmental Working Group; the National Governors' Association Task Force; the National Association of Attorneys General; and the Transportation External Coordinating Working Group.

For several years, EM has been a leader among federal agencies in involving the public in budget formulation. In addition, EM and the EM sites conduct regular public meetings on issues of public interest.

## **IV. FY 2000 Budget Structure**

In FY 1999, EM established a new budget structure that more closely aligns with EM's goals of accelerating cleanup and moving to project-based management. This structure is intended to continue to improve EM's ability to track progress and costs and provide a more understandable reporting structure. There are three fundamental elements to this structure:

- # Organizing work into 'projects' (which are described in Project Baseline Summaries);
- # Using program accounts which focus on site closure, site/project completion, and post 2006 completion; and
- # Aligning performance measures (metrics) by project to meet the intent and requirements of the Government Performance and Results Act.

The budget structure continues to categorize projects according to their specific appropriations -- Defense Facilities Closure Projects, Defense Environmental Restoration and Waste Management, Defense Environmental Management Privatization, Non-Defense Environmental Management, and the Uranium Enrichment Decontamination and Decommissioning Fund.

Beginning with the FY 2000 Congressional Budget Request, the budget narrative is written to the project baseline summary level, within each program and appropriation account. This is a departure from the organization of the FY 1999 request, which was presented by performance measure/major activity and which provided crosscut information regarding the projects. Although the narrative discussion now focuses on the projects, crosscut information is provided in the 'Ancillary Tables' section of this Executive Budget Summary, which includes information such as funding estimates by performance metric, funding by installation, etc.

### **A. Project Baseline Summaries**

As mentioned previously, for the FY 2000 budget request, EM has identified more than 390 projects (as described in Project Baseline Summaries) that include (1) defined scopes, schedules, and costs; (2) budget data; (3) performance data; and, (4) compliance and safety and health data. The EM program has also aggregated the budget and performance data for each site to demonstrate the results that will be accomplished for the resources requested.

### **B. Program Accounts: Focus on Accelerating and Completing Cleanup**

EM's three budget program accounts reflect near-term goals and emphasis on completion.

- # **Site Closure.** This account provides funding for completing cleanup and closing down facilities with no enduring Federal presence on-site, except for stewardship activities. The Site Closure account under the Defense Appropriation includes the Rocky Flats site in Colorado, and the Fernald, Miamisburg, Columbus, and Ashtabula sites in Ohio. In the Non-Defense Appropriation, the Site Closure account includes the Grand Junction, CO; Weldon Spring, MO; West Valley, NY; Columbus, OH; and Miamisburg, OH sites,

as well as the UMTRA-Groundwater sites in various states. The Department has established a goal of completing cleanup at the sites in this account by the end of 2006.

- # **Site/Project Completion.** This account provides funding for environmental management projects that are expected to be completed by 2006 at (1) EM sites where overall site cleanup will not be fully accomplished by 2006; and (2) DOE sites where all EM projects will be completed by 2006 (except for long-term stewardship activities), but where there will be a continuing federal workforce at the site to carry out enduring non-EM missions, such as support of nuclear weapons activities or scientific research, and the necessary waste management activities to handle newly-generated wastes from these missions. This account includes projects and sites under the following Operations Offices: Albuquerque, Chicago, Idaho, Oakland, Richland, and Savannah River.

In a limited number of cases, sites have been placed in the Site/Project Completion account even though there is no expectation of a continuing mission after cleanup is completed. In these instances, use of the Site Closure account would have created an additional appropriation control for an Operations/Field office with a limited amount of associated funding, thereby hindering managerial flexibility in the execution of projects at these sites.

- # **Post 2006 Completion.** This account provides funding for projects that are expected to require work beyond FY 2006. This includes projects at the Albuquerque, Idaho, Nevada, Oak Ridge, Richland, and Savannah River Operations Offices, as well as the Waste Isolation Pilot Plant in Carlsbad, New Mexico, and multi-site and Headquarters activities.

This account includes efforts at the largest Department sites, where operations have been carried out over a long period of time and associated cleanup will also take longer to complete.

### **C. Government Performance and Results Act Implementation**

The EM program has been actively involved in incorporating the requirements of the Government Performance and Results Act into its planning, budgeting, and management systems. The Act requires: (1) Strategic Plans that articulate each program's fundamental missions and provide long-term, general goals for implementing the missions; (2) Annual Performance Plans that provide the direct link between the longer-term goals outlined in the Strategic Plan and what managers do on a day-to-day basis; and (3) Annual Performance Reports that describe the program results for the resources expended and how well the previous year's Annual Performance Plan goals were met.

The EM program is making progress in implementing the intent and requirements of the Government Performance and Results Act. Specific areas of emphasis include the following:

- # EM will establish FY 1999 Management Commitments for each Operations/Field Office that are based on a roll-up of the Project Baseline Summary performance goals and selected key milestones reported in the FY 2000 budget request. These commitments will be used as a management tool for assessing program performance and results during Headquarters/Field periodic status reviews.
- # The EM program will focus on improving the accuracy and completeness of its performance measures data. In particular, the life-cycle quantity estimates for the



measures (i.e., cubic meters of waste disposed) will be further refined and improved to set the near-term performance goals within the appropriate context of the total environmental work scope to be accomplished. EM will continue to manage using the Corporate Performance Measures (i.e., release site completions, facilities decommissioned, waste disposed, etc.) to demonstrate quantifiable progress towards completion of EM's geographic sites.

- # The EM program will continue to improve its effectiveness and efficiency. To reduce the costs of EM's massive cleanup effort, the program continues to seek opportunities to accelerate cleanup without jeopardizing the safety of workers, communities, or the environment. By implementing enhanced performance, EM will be able to accelerate cleanup and closure schedules, and thereby lower life-cycle cleanup costs. EM has established accelerated site closure targets for the Rocky Flats Environmental Technology Site (from 2010 to 2006), the Fernald Environmental Management Project (from 2008 to 2005), and Miamisburg Environmental Management Project (from 2005 to 2004).

EM has identified several enhanced performance mechanisms that are expected to result in improvements to productivity and/or accelerated site closure:

- ▶ Acceleration of Technology Deployment -- Introducing less expensive and/or more effective cleanup technologies;
- ▶ Integration -- Identifying better ways to transfer and manage wastes among sites;
- ▶ Project Sequencing -- Completing projects with high "up-keep" costs;
- ▶ Contract Reform -- Creating incentives for contractors to improve performance (quality results and accelerated completion); and
- ▶ Lessons Learned -- Increasing productivity based on lessons learned.

## **V. Transfer of Responsibilities**

There are no new transfers of responsibility between EM and other Departmental programs reflected in the FY 2000 budget request. However, the Office of Environment, Safety and Health will manage the health studies program using funding appropriated or requested under the Defense Environmental Restoration and Waste Management appropriation (consistent with FY 1999). In addition, the DOE Office of Science manages the solicitation of proposals and the scientific review process, in partnership with the EM Science Program.

## **VI. Prior Year Balances**

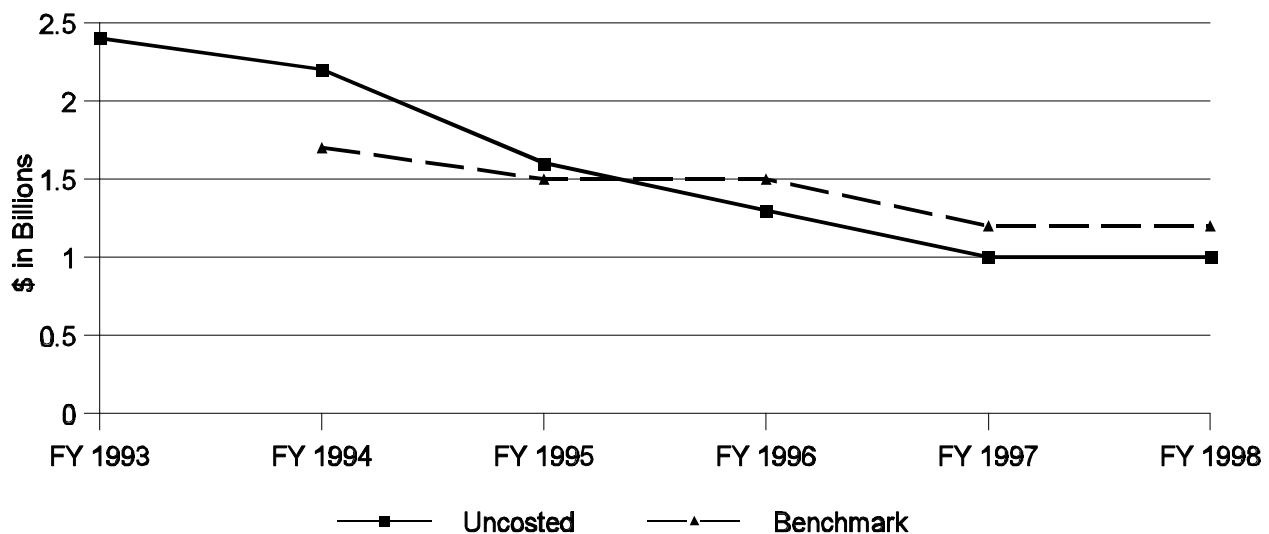
Prior year uncosted obligations exist when funds are legally obligated on a contract, subcontract, or purchase order, but the work has not yet been performed and the funds have not been costed or liquidated. These funds are commonly referred to as uncosted balances. Over the past several years, the Department has made significant progress in reducing the level of uncosted balances. In fact, as reflected in the Department's "Report on Uncosted Balances for Fiscal Year Ended September 30, 1997", issued to

Congress on March 16, 1998, "the Department's total uncosted balance is the lowest it has been in over 16 years."

The EM program has made a significant contribution towards reducing uncosted balances. Although some uncosted balances are a necessary business practice, the challenge is to define how much is enough. In FY 1996, EM established benchmarks (reasonable levels to carry over from one fiscal year to the next) as a tool to define the point at which greater scrutiny must be applied to ensure that uncosted balances are not excessive. In FY 1997, the Department adopted percentage thresholds which are applied consistently across all Departmental programs.

EM's uncosted balances were well below the Department's thresholds in FY 1997. For example, the EM actual uncosted carryover for FY 1997 was \$1.01 billion, over \$200 million below the Department's guidelines. This trend continued through FY 1998 with an ending uncosted balance of \$1.006 billion, well below the Department's threshold of \$1.2 billion. EM is continuing to monitor its uncosted balances to improve funds management to ensure that uncosted balances carried forward to the next fiscal year are as low as practical and obligated on essential work scope/activities. The following chart depicts the historical trend of EM's uncosted balances versus the established benchmarks.

## Uncosted vs. Benchmarks



	(dollars in billions)					
	FY 1993	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998
Uncosted .....	2.4	2.2	1.6	1.3	1.0	1.0
Benchmark .....	n/a	1.7	1.5	1.5	1.2	1.1

## VII. Environmental Management Corporate Performance Measures

EM has moved aggressively towards developing and implementing a performance-based budget that clearly demonstrates the program and project results expected for the resources requested. Building upon past experience, the FY 2000 budget was enhanced by aligning performance measures by project within the specific appropriation and program accounts.

EM managers have developed specific corporate measures to link planning goals with the budget, program execution, and evaluation of program performance and results. The EM corporate performance measures demonstrate tangible environmental results towards completing cleanup (or achieving the intended end state) at the remaining geographic sites. These corporate performance measures include:

- # Volume of waste treated and disposed by waste type
- # Number of release sites cleaned up
- # Number of facilities deactivated
- # Number of facilities decommissioned
- # Quantity of nuclear material and spent nuclear fuel stabilized and prepared for disposition
- # Number and type of alternative technology deployments

The summary-level performance measures reflected in the FY 2000 budget request are based upon the project-level performance measures contained in the Project Baseline Summaries. The corporate performance measures also include crosscutting measures related to health and safety, contracting, and stakeholder trust and confidence. The linkage between the projects' performance measures and EM's budget request will enable EM, the Congress, and others to track, on an annual basis, EM's progress towards its commitments, as well as progress towards project and geographic site completion.

The FY 2000 budget request presents performance measures data at the Project Baseline Summary level and at various roll-up levels to demonstrate key program accomplishments and results at EM's projects and sites. Each project includes a list of the corporate performance measures applicable to the project for FY 1998, FY 1999, and FY 2000. While a significant number of EM's projects have quantifiable corporate performance measures, not all projects have work scope associated with these measures. Some of the reasons why a project does not contain any corporate measures for the budget profile years include: work on the project has not yet begun; work is in progress and has not yet been completed; and the project is for landlord, infrastructure, or construction activities that do not have measures. The project baseline summary narrative provides a description of the project's activities, measures, and work scope to fully address planned and actual accomplishments and results.

### A. Geographic Site Completions

The Department is implementing strategies to accomplish DOE's Environmental Quality strategic objective to "*clean up as many as possible of the Department's 53 remaining contaminated geographic sites by 2006.*" At the ten remaining sites after 2006, including our five largest sites, treatment will continue for the remaining 'legacy' waste streams. Fifty-three geographic sites remained to be cleaned up as of the beginning of FY 1998 (this number included the addition of the Waste Isolation Pilot Plant, which is a disposal site). Five geographic sites were completed during FY 1998, leaving a total of 48 geographic sites to be cleaned up as of the beginning of FY 1999.

A geographic site is considered 'complete' (or at its end state) when:

- # Deactivation or decommissioning of all facilities currently in the EM program has been completed, excluding any long-term surveillance and monitoring;
- # All releases to the environment have been cleaned up in accordance with agreed-upon cleanup standards;
- # Groundwater contamination has been contained, or long-term treatment or monitoring is in place;
- # Nuclear material and spent fuel have been stabilized and/or placed in safe long-term storage; and
- # 'Legacy' waste (i.e., waste produced by past nuclear weapons production activities, with the exception of high-level waste) has been disposed of in an approved manner.

### ***FY 2000 Geographic Site Completions***

In FY 2000, EM plans to complete three geographic sites, increasing the total completed to 71 of the 113 geographic sites in the EM program. These completions reflect 24 of the 24 Uranium Mill Tailings Remedial Action surface project sites (two of these sites were delisted at the request of the State of North Dakota); all of the 25 Formerly Utilized Sites Remedial Action Project sites (per Congressional direction, the remaining Formerly Utilized Sites Remedial Action Project sites were transferred to the Army Corps of Engineers for remediation at the beginning of FY 1998); and 22 other sites, leaving 42 sites to be cleaned up. The three planned geographic site completions in FY 2000 are:

- # Argonne National Laboratory-West in Idaho;
- # General Atomics Site in California; and,
- # Battelle Columbus Laboratory King Avenue Site in Ohio.

### ***Geographic Site Completion Progress***

- # In FY 1999, EM plans to complete the following three geographic sites, bringing the number of completed geographic sites to 68:
  - ▶ Ames Laboratory in Iowa;
  - ▶ Sandia National Laboratory in California; and,
  - ▶ Princeton Plasma Physics Laboratory in New Jersey.
- # In FY 1998, EM completed the following five geographic sites, bringing the number of completed geographic sites to 65:
  - ▶ Center for Energy and Environmental Research in Puerto Rico; and,
  - ▶ Completed remedial action at the final two Uranium Mill Tailings Remedial Action surface project sites (Naturita and Maybell in Colorado) and revoked the designation of the two North Dakota sites (Belfield and Bowman) from the project.

## **B. Cleanup**

EM has also demonstrated and will continue to demonstrate significant cleanup progress through the completion of remediation at numerous "release sites" and "facilities" at the various geographic sites, ultimately leading to the completion of an entire geographic site. Release sites represent discrete areas of contamination at a particular site, and facilities are contaminated structures.

Remedial actions/release site cleanup, facility deactivation, and facility decommissioning are further defined as follows:

- # *Remedial Action/Release Site Cleanup* -- Remedial actions are taken to identify and contain or remove soil and ground water contamination to prevent it from spreading. Remedial action/release site cleanups are conducted at inactive waste sites or facilities where releases or spills have occurred and contamination has been released into the environment. Completion of release site assessments are also tracked to show interim cleanup results.
- # *Facility Deactivation* -- Deactivation activities minimize the risks, hazards, and associated costs at facilities and make those facilities available for potential re-use or eventual decontamination and decommissioning. These activities can include material handling and movement activities. The intent, however, is not to achieve an end point for the material, but to remove the material with the goal of readying the facility/system for the preferred end state.
- # *Facility Decommissioning* -- Decommissioning involves the decontamination and/or dismantlement and removal of nuclear facilities that are no longer active and pose a risk to public health or the environment. Decommissioning operations range from small cleanup activities involving portions of buildings to complete structural dismantlement. Completion of facility assessments are also tracked to show interim decommissioning results.

#### ***FY 2000 Performance Goals for Cleanup***

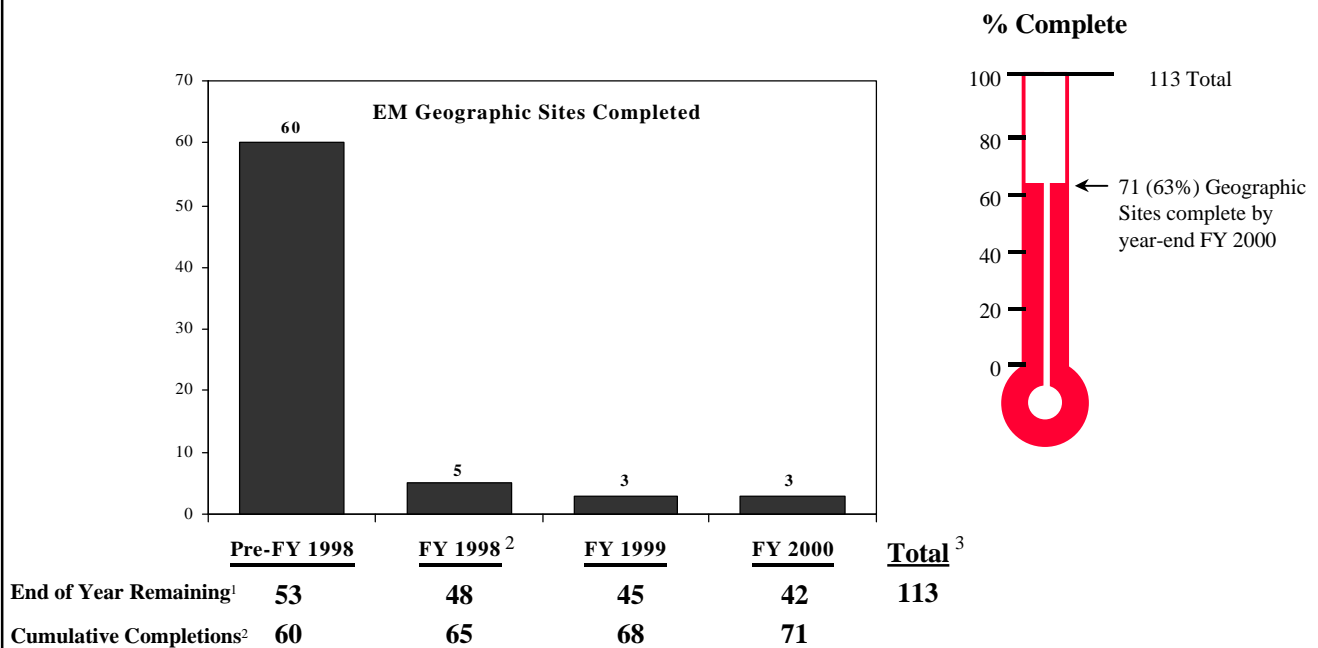
- # Release Site Assessments and Cleanups
  - ▶ Complete approximately 760 release site assessments.
  - ▶ Complete approximately 200 release site cleanups, increasing the total number of release sites completed to more than 4,400 out of a total inventory of approximately 9,700 release sites.
- # Facility Deactivation and Decommissioning
  - ▶ Deactivate approximately 60 facilities.
  - ▶ Complete approximately 345 facility decommissioning assessments.
  - ▶ Decommission 110 facilities, increasing the total number of facilities decommissioned to more than 600 out of a total inventory of approximately 3,300 facilities.

#### ***Cleanup Progress***

- # Release Site Assessments and Cleanups
  - ▶ Complete approximately 310 release site assessments in FY 1999; and completed 583 release site assessments in FY 1998.
  - ▶ Complete approximately 165 release site cleanups in FY 1999; and completed 290 release site cleanups in FY 1998.
- # Facility Deactivation and Decommissioning
  - ▶ Deactivate approximately 65 facilities in FY 1999; and deactivated 70 facilities in FY 1998.

- ▶ Complete approximately 120 facility decommissioning assessments in FY 1999; and completed 89 facility decommissioning assessments in FY 1998.
- ▶ Decommission approximately 80 facilities in FY 1999; and decommissioned 108 facilities in FY 1998.

## Geographic Site Completions

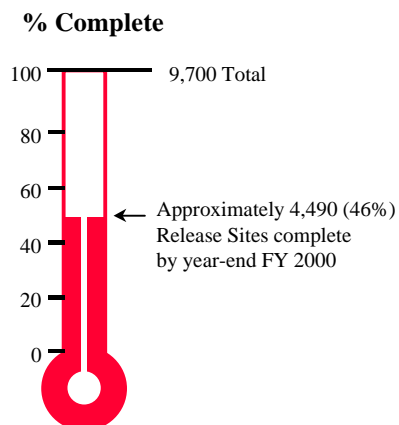
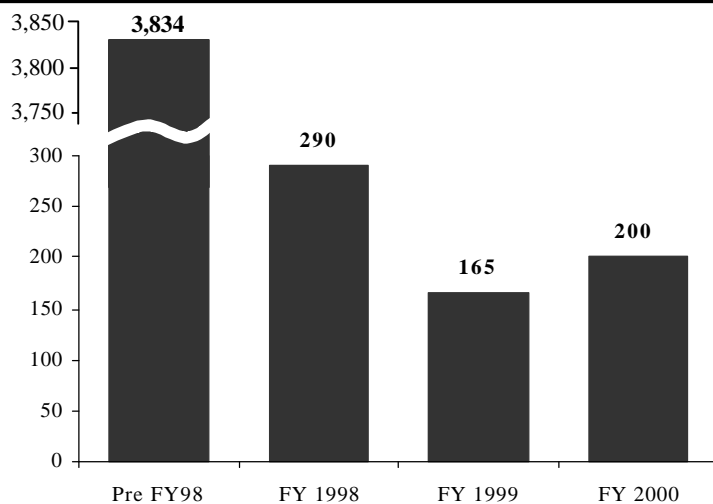


1. 53 geographic sites remained to be cleaned up at the beginning of FY1998 (this includes the addition of WIPP which is a disposal site).

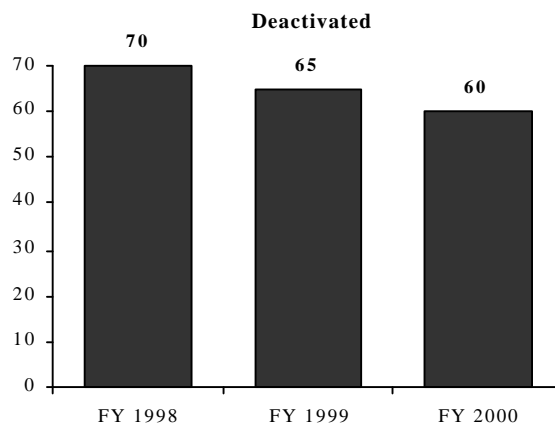
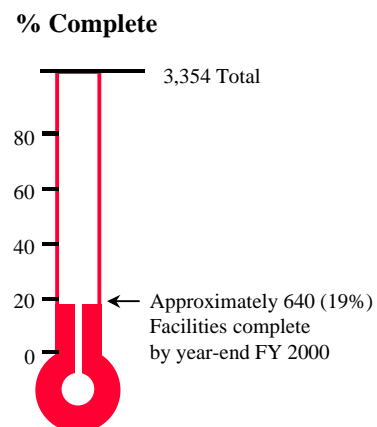
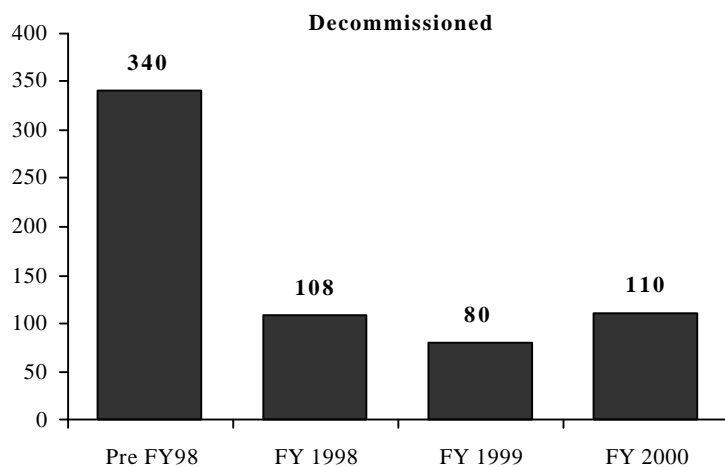
2. Completions include two UMTRA sites Belfield and Bowman, ND. The designation of these sites as UMTRA sites was revoked in FY1998.

3. Excludes 21 FUSRAP sites transferred to the U.S. Army Corps of Engineers in FY 1998.

## Release Site Completions



## Facility Completions



### C. Waste Treatment, Storage, and Disposal

The Department is implementing strategies to accomplish DOE's Environmental Quality strategic objective to, *"safely and expeditiously dispose of waste generated by nuclear weapons and civilian nuclear research and development programs and make defense high level radioactive wastes disposal-ready."* Listed below are long-term and near-term goals for managing the radioactive waste types: high-level waste, transuranic waste, low-level waste, and mixed low-level waste. EM issued the Waste Management Programmatic Environmental Impact Statement Records of Decision for Hazardous Waste Treatment and Transuranic Waste Storage and Treatment in FY 1998 and continued to resolve issues related to the issuance of Records of Decision for High-Level Waste Storage and Low-Level and Mixed Low-Level Waste Treatment and Disposal. These Records of Decision will help define the storage, treatment, and disposal facilities for waste management activities. EM developed initial disposition maps to show the planned pathways to move waste or materials from inventory or generation through required processing to treatment or stabilization and on to final disposition. In addition, DOE will examine areas where consolidation of facilities can occur to reduce overall programmatic costs.

- # *High-Level Waste* -- High-level waste is highly-radioactive waste material resulting from the reprocessing of spent nuclear fuel, including the liquid waste produced directly in reprocessing and any solid material derived from such liquid waste that contains fission products in sufficient concentrations, and other highly radioactive material that is determined, consistent with existing law, to require permanent isolation. The waste is stored largely as a liquid or sludge, with some waste in the form of calcine. The long-term objective for high-level waste management is disposal in a licensed geologic repository. High-level waste is made disposal-ready through treatment to produce canisters of vitrified waste. The Department is currently vitrifying liquid high-level waste at the Defense Waste Processing Facility at the Savannah River Site in South Carolina, and the West Valley Demonstration Project in New York. Work will also continue for the privatization of high-level waste treatment at the Hanford Site in Washington and solidification of liquid to a calcine form at the Idaho National Engineering and Environmental Laboratory.
- # *Transuranic Waste* -- Transuranic waste is radioactive waste containing more than 100 nanocuries of alpha-emitting transuranic isotopes per gram of waste, with half-lives greater than 20 years, except for a) high-level radioactive waste; b) waste that the Secretary of Energy has determined, with the concurrence of the Administrator of the Environmental Protection Agency, does not need the degree of isolation required by the 40 CFR Part 191 disposal regulations; or c) waste that the Nuclear Regulatory Commission has approved for disposal on a case-by-case basis in accordance with 10 CFR Part 61. Approximately 98% of DOE's transuranic waste is stored at six major sites: the Los Alamos National Laboratory, the Rocky Flats Environmental Technology Site, the Oak Ridge National Laboratory, the Hanford Site, the Idaho National Engineering and Environmental Laboratory, and the Savannah River Site. The long-term goal is to dispose of all defense-related transuranic waste in the Waste Isolation Pilot Plant in New Mexico.



- # *Mixed Low-Level Waste* -- Mixed low-level waste consists of both hazardous (as defined by the Resource Conservation and Recovery Act) and radioactive (as defined by the Atomic Energy Act) components and is not high-level or transuranic waste. The long-term goal for mixed low-level waste is to develop the necessary treatment and disposal capacity needed to dispose of the existing inventory as well as any newly generated waste. The near-term goal for mixed waste is to complete site selection for disposal facilities and optimize the treatment configuration outlined in the site treatment plans.
- # *Low-Level Waste* -- Low-level waste is radioactive waste, including accelerator-produced waste that is not high-level waste, radioactive waste, transuranic waste, spent nuclear fuel, byproduct material (as defined under the Atomic Energy Act of 1954), or naturally occurring radioactive material. Low-level waste is currently disposed at Los Alamos National Laboratory, the Idaho National Engineering and Environmental Laboratory, and the Savannah River, Oak Ridge, Nevada, and Hanford sites. The Nevada and Hanford sites also accept low-level waste from other sites in the DOE Complex. The Savannah River Site accepts a small volume of low-level waste from the Naval Reactors Program. The near-term and long-term goals of the low-level waste management program are to continue to dispose of low-level waste at a pace to eliminate currently stored low-level waste and match generation of new waste.

In addition to the waste type measures listed above, EM also reports the quantity of hazardous waste disposed and the volume of remediation waste generated. While not EM Corporate Performance Measures, hazardous waste and remediation waste activities are reported in the budget by Project Baseline Summary, where applicable.

The safe storage, treatment and disposal of waste ensures that these materials do not pose unacceptable risk to the public, workers, or the environment. Waste management activities support completion of EM's geographic sites and will ultimately enable many of EM's sites to be made available for other beneficial uses.

### ***FY 2000 Performance Goals for Waste Management***

Specific performance goals for managing the treatment, storage (i.e., FY 2000 year-end inventory), and disposal of the Department's waste in FY 2000 include:

#### **# High-Level Waste**

- ▶ Treat approximately 1,400 cubic meters of high-level waste.
- ▶ Store approximately 355,000 cubic meters of high-level waste.
- ▶ Produce approximately 105 canisters of high-level waste:
  - S** At the Defense Waste Processing Facility at the Savannah River Site, vitrify approximately 100 canisters of high-level waste. This completes about 15% of the total canisters that will be produced at Savannah River from FY 1996 to life-cycle completion.
  - S** Continue processing high-level waste tank heels at the West Valley Demonstration Project to produce up to 5 canisters of high-level waste in FY 2000. This

completes more than 90% of the total canisters that will be produced at West Valley from FY 1996 to life-cycle completion.

# Transuranic Waste

- ▶ Treat approximately 600 cubic meters of transuranic waste.
- ▶ Store approximately 109,000 cubic meters of transuranic waste.
- ▶ Make disposal-ready and ship to the Waste Isolation Pilot Plant in Carlsbad, New Mexico, approximately 3,400 cubic meters of transuranic waste. Shipment of transuranic waste to the Waste Isolation Pilot Plant is contingent upon resolution of pending litigation, and for mixed-waste, timely receipt of the Resource Conservation and Recovery Act Part B Permit. This is about 2% of the total transuranic waste that requires disposal between FY 1998 and FY 2070.

# Mixed Low-Level Waste

- ▶ Treat approximately 10,000 cubic meters of mixed low-level waste.
- ▶ Store approximately 34,000 cubic meters of mixed low-level waste.
- ▶ Dispose of approximately 15,000 cubic meters of mixed low-level waste.

# Low-Level Waste

- ▶ Treat approximately 9,000 cubic meters of low-level waste.
- ▶ Store approximately 213,000 cubic meters of low-level waste.
- ▶ Dispose of approximately 79,000 cubic meters of low-level waste.

***Waste Management Progress***

Examples of progress in managing our waste include:

# High-Level Waste Treatment and Disposal-Ready

- ▶ Treat approximately 1,500 cubic meters of high-level waste in FY 1999; and treated 2,411 cubic meters of high-level waste in FY 1998.
- ▶ Produce approximately 215 canisters of high-level waste in FY 1999; and produced 331 canisters of high-level waste in FY 1998. Specifically:
  - S EM expects to produce up to 200 canisters of vitrified high-level waste at the Defense Waste Processing Facility at Savannah River in FY 1999; and produced 250 vitrified high-level waste canisters in FY 1998.
  - S EM expects to produce up to 15 canisters of vitrified high-level waste at the West Valley Demonstration Project in FY 1999; and produced 81 canisters of vitrified high-level waste in FY 1998.

# Transuranic Waste Treatment and Disposal

- ▶ Treat approximately 350 cubic meters of transuranic waste in FY 1999; and treated 90 cubic meters of transuranic waste in FY 1998.

- ▶ Make disposal-ready and ship to the Waste Isolation Pilot Plant approximately 700 cubic meters of transuranic waste in FY 1999; and made disposal-ready 229 cubic meters of transuranic waste in FY 1998. Shipment of transuranic waste to the Waste Isolation Pilot Plant is contingent upon resolution of pending litigation, and for mixed waste, timely receipt of the Resource Conservation and Recovery Act Part B permit.

# Mixed Low-Level Waste Treatment and Disposal

- ▶ Treat approximately 11,000 cubic meters of mixed low-level waste in FY 1999; treated 11,048 cubic meters of mixed low-level waste in FY 1998.
- ▶ Dispose of approximately 15,000 cubic meters in FY 1999; disposed of 10,727 cubic meters of mixed low-level waste in FY 1998.

# Low-Level Waste Treatment and Disposal

- ▶ Treat approximately 21,000 cubic meters of low-level waste in FY 1999; treated 15,375 cubic meters of low-level waste in FY 1998.
- ▶ Dispose of approximately 73,000 cubic meters in FY 1999; disposed of 29,762 cubic meters of low-level waste in FY 1998.

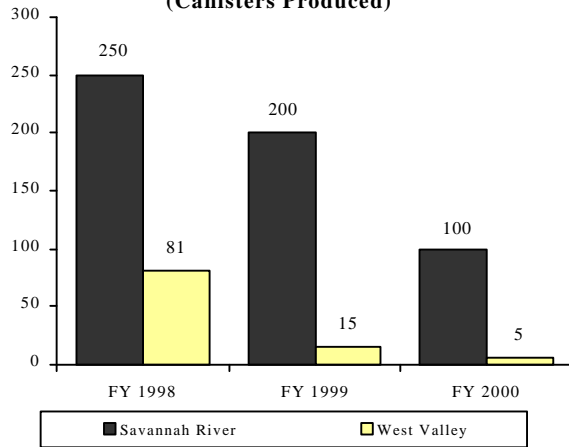
Other significant examples of progress in managing our waste include:

- # Declared the Waste Isolation Pilot Plant geologic repository ready for operations for transuranic waste disposal in FY 1998; disposal operations of non-mixed transuranic waste are expected to begin in FY 1999; a permit for receipt and disposal of mixed transuranic waste is also expected to be received in FY 1999.
- # The Los Alamos National Laboratory received certification from the Carlsbad Area Office and the Environmental Protection Agency to dispose of transuranic waste at the Waste Isolation Pilot Plant. Both the Idaho National Engineering and Environmental Laboratory and Rocky Flats Environmental Technology Site received certification from the Carlsbad Area Office, and are in the process of receiving approval from the Environmental Protection Agency, to dispose of transuranic waste at the Waste Isolation Pilot Plant.
- # Authorized commencement of the Tank Waste Remediation System contract Phase 1B at Hanford in August 1998, for treatment of between 6% and 13% of the high-level waste.
- # Began site development and construction of support facilities and began Immobilized Low Activity Waste and Immobilized High Activity Waste storage facility projects at Hanford to support privatization.
- # Completed 16 Tank Characterization Reports at Hanford, meeting all required Defense Nuclear Facilities Safety Board Recommendation 93-5, Tank Waste Characterization Studies, commitments for FY 1998.
- # Started operations of the Waste Receiving and Processing facility transuranic waste processing line at Hanford in FY 1998.

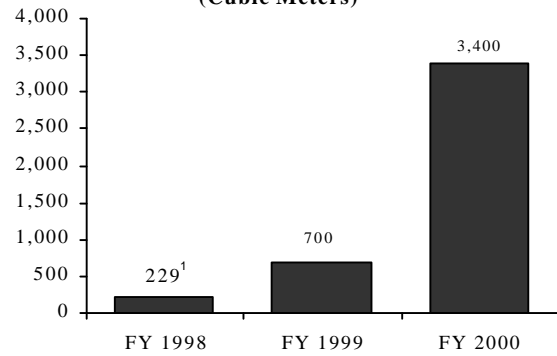
- # Closed the Unreviewed Safety Question for organic complexants at Hanford, resolved safety issues, and took 18 organic complexant tanks off the watch list in FY 1998; also closed the flammable gas Unreviewed Safety Question for double-shell and single-shell tanks at Hanford.
- # Completed the tank farm cross-site transfer line at Hanford in FY 1998.
- # Started or resumed interim stabilization of three tanks at Hanford in FY 1998; expect to start interim stabilization of four additional Hanford tanks in FY 1999.
- # Began operation of the Replacement High-Level Waste Evaporator at Savannah River to assist in achieving space gain of 2.9 million gallons (FY 1999) in the tank farm through evaporation of waste.
- # Closed a second high-level radioactive waste tank at Savannah River in FY 1998.
- # Completed calcining the remaining non-sodium bearing waste at Idaho, four months ahead of the Idaho Settlement Agreement milestone.
- # Awarded contract and began Phase I of the Advanced Mixed Waste Treatment Project at the Idaho National Engineering and Environmental Laboratory to treat DOE mixed transuranic and low-level waste.
- # Awarded the Oak Ridge transuranic waste treatment privatization contract and broad spectrum contracts for mixed low-level waste treatment in FY 1998.
- # Completed Phase I vitrification at the West Valley Demonstration Project in FY 1998, ahead of schedule and under budget; 500,000 curies are expected to be transferred from the tank farms to the vitrification facility in FY 1999.
- # Negotiated a Joint Federal/State Oversight Agreement of the Low-Level Waste Disposal Program with the State of Nevada in FY 1998.
- # Completed design and construction of the Waste Management Facility upgrade at the Argonne National Laboratory-East in FY 1998.
- # Issued Records of Decision for the treatment and storage of transuranic waste and for treatment of hazardous waste based on the Waste Management Programmatic Environmental Impact Statement in FY 1998; Records of Decision for low-level and mixed low-level waste treatment and disposal are expected to be issued in FY 1999.

# Waste Management Progress

**High-Level Waste Progress  
(Canisters Produced)**

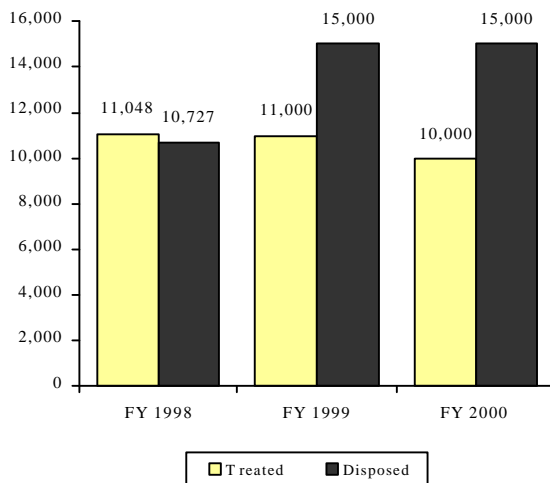


**Transuranic Waste Progress  
Make Disposal Ready and Ship to WIPP  
(Cubic Meters)**

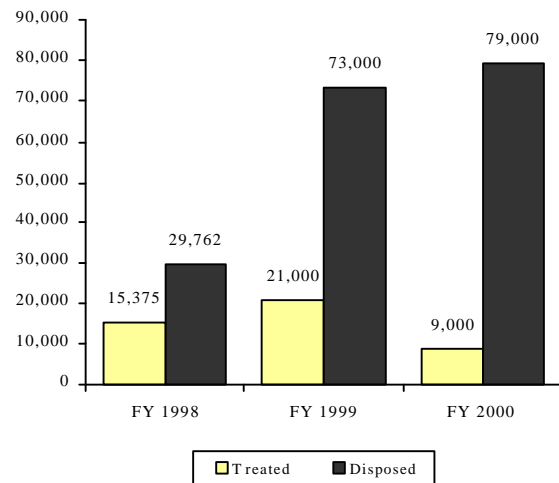


<sup>1</sup>FY 1998 reflects disposal-ready volumes

**Mixed Low-Level Waste Progress  
(Cubic Meters)**



**Low-Level Waste Progress  
(Cubic Meters)**



## **D. Pollution Prevention**

The Department is implementing initiatives to accomplish DOE's Environmental Quality strategic objective to "*prevent future pollution*" in accordance with the Department-wide pollution prevention goals issued by the Secretary on May 3, 1996. The goals require the Department to reduce routine waste generation by 50 percent (for hazardous, mixed, and radioactive wastes) by December 31, 1999, based upon 1993 baseline rates.

For FY 2000 and beyond, EM will shift its emphasis from routine waste prevention to reducing waste that results from cleanup, stabilization, and decommissioning activities. The annual goal for this waste reduction is 10 percent, from annual planned baseline volumes. The Department plans to change its way of managing the Pollution Prevention Program in FY 2000 by shifting more responsibility from Headquarters to the field. Funds for the Headquarters-controlled National Pollution Prevention Program project baseline summary will be reduced. The field will provide resources to implement many of the activities funded by the National Pollution Prevention Program in prior years. Examples include activities required to comply with Executive Orders and DOE Orders, technical support to waste generators to identify opportunities, implementing high return-on-investment projects, tracking pollution prevention progress and reporting results to Headquarters. The purpose of this program shift is to integrate Pollution Prevention into the Department's operating culture.

## **E. Nuclear Material and Spent Nuclear Fuel Stabilization**

Stabilizing, monitoring, and maintaining the large quantity of nuclear material and spent nuclear fuel is one of the most urgent tasks in the EM program. Nuclear material stabilization activities support the DOE Environmental Quality strategic objective to "*reduce the most serious risks from the environmental legacy of the U.S. nuclear weapons complex first.*" The Department must stabilize these materials and fuel (i.e., produce a safer chemical and/or physical form of the material) to reduce the level of potential risks such as exposure to radiation, contamination of people and the environment, and critical events. Stabilization converts nuclear material to a stable form suitable for storage, either safe interim or long-term depending upon the programmatic plans for the material. Stabilization means that something (processing from a liquid to a solid form, processing to remove activated waste streams, repackaging, etc.) must be done to the nuclear material so that they pose significantly less risk to workers, the public, and/or the environment. Nuclear material will be stabilized in the F-Canyon, FB-Line, H-Canyon, and HB-Line at Savannah River, the Plutonium Finishing Plant at Richland, and in several facilities at the Rocky Flats Environmental Technology Site. These activities have been prioritized so that the most serious risks are addressed first. Milestones have also been developed for the management of spent nuclear fuel including both DOE-owned fuels, as well as foreign research reactor fuels being returned to the United States for non-proliferation purposes. These fuels will be treated, where necessary, packaged suitably for final disposal where practicable, and placed in interim dry storage. Further, as nuclear material and spent fuel are placed in a more stable (i.e., lower risk) form, the physical plant (i.e., buildings, production systems, machinery, and utilities) can be deactivated.

The performance measures for nuclear material and spent nuclear fuel focus on the amount of nuclear material *stabilized* and subsequently *made disposition-ready* while awaiting final disposition.

## ***Nuclear Material***

- # *Stabilization* encompasses activities where the intent is to convert nuclear material to a stable form suitable for storage, either safe interim or long-term, depending upon the programmatic plans for the material. This includes staging, preparation, and operations actions. These actions are taken to both manage and reduce risks. The following types of nuclear material will be reported under “stabilization”: Plutonium Solution (liters); Plutonium Residue (kilograms bulk); Plutonium Metal/Oxides (containers); Uranium Solution (liters); Uranium in Other Forms (kilograms bulk); Other Nuclear Material in Solution Form (liters); and Other Nuclear Material in Other Forms (handling units).
- # *Material Made Disposition-Ready*. “Disposition-ready” materials are prepared for transportation, long-term storage, or final disposition. The amount of material provided represents the material’s post-stabilization (treatment) weight, mass, volume, or number of containers. The following types of nuclear material will be reported under “disposition-ready”: Plutonium Metal/Oxides or in Other Forms (containers); Uranium Solution (liters); Uranium in Other Forms (kg bulk); Other Nuclear Material in Solution Form (liters); and Other Nuclear Material in Other Forms (containers).

***Spent Nuclear Fuel***. Spent nuclear fuel includes fuel, targets, and slugs.

- # *Stabilization*. Spent nuclear fuel stabilization encompasses activities where the intent is to treat, where necessary, spent nuclear fuel to a safe, stable state to a point where it can be made disposition ready, including all staging and preparation actions. These actions are taken to both manage and reduce risks.
- # *Disposition Ready*. Spent nuclear fuel is prepared as best as known practices will allow for transportation, long-term storage, or final disposal. Activities under “disposition ready” may include repackaging/movement of stabilized spent fuel from wet to dry storage; technology development for disposal; and repackaging of fuel to meet storage standards and criteria.

## ***FY 2000 Performance Goals for Nuclear Material and Spent Nuclear Fuel Stabilization***

The existing performance measures for nuclear material and spent nuclear fuel were revised during FY 1998 to resolve classified data reporting issues and to more completely quantify progress in nuclear material and spent nuclear fuel stabilization. These updated performance measures are reported below.

- # Nuclear Material Stabilized
  - Stabilize approximately 160 liters of plutonium solution.
  - Stabilize approximately 38,000 kilograms bulk of plutonium residue.
  - Stabilize approximately 238 containers of plutonium metal/oxides.
  - Stabilize approximately 9 kilograms bulk of uranium in other forms.
  - Stabilize approximately 430 handling units of other nuclear material in other forms.
- # Nuclear Material Made Disposition-Ready
  - Make disposition-ready approximately 910 containers of plutonium metal/oxides/other
  - Make disposition-ready approximately 85,600 liters of uranium solution

- ▶ Make disposition-ready approximately 2 containers of other nuclear material in other forms
- # Spent Nuclear Fuel Stabilized and Made Disposition-Ready
  - ▶ Stabilize approximately 53.1 metric tons of heavy metal of spent nuclear fuel
  - ▶ Make disposition-ready approximately 0.005 metric tons of heavy metal of spent nuclear fuel
  - ▶ Make disposition-ready approximately 0.016 cubic meters of spent nuclear fuel

### ***Nuclear Material Stabilization Progress***

Examples of progress in managing nuclear material for FY 1998 and FY 1999 include:

- # Nuclear Material Stabilized
  - ▶ Stabilize approximately 40 liters of plutonium solution in FY 1999; stabilized 3,035 liters of plutonium solution in FY 1998.
  - ▶ Stabilize approximately 33,000 kilograms bulk of plutonium residue in FY 1999; stabilized 5,004 kilograms bulk of plutonium residue in FY 1998.
  - ▶ Stabilize approximately 332 containers of plutonium metal/oxides/other in FY 1999; stabilized 80 containers of plutonium metal/oxides/other in FY 1998.
  - ▶ Stabilize approximately 78 kilograms bulk of uranium in other forms in FY 1999.
  - ▶ Stabilize approximately 460 handling units of other nuclear material in other forms in FY 1999; stabilized 147 handling units of other nuclear material in other forms in FY 1998.
- # Nuclear Material Made Disposition-Ready
  - ▶ Make disposition-ready approximately 2 containers of plutonium metal/oxides in FY 1999; made disposition-ready 2 containers of plutonium metal/oxides in FY 1998.
  - ▶ Make disposition-ready approximately 7 kilograms bulk of uranium in other forms in FY 1999.
  - ▶ Make disposition-ready approximately 23 containers of other nuclear material in other forms in FY 1999; made disposition-ready 3 containers in FY 1998.

### ***Spent Nuclear Fuel Stabilization Progress***

Examples of progress in managing spent nuclear fuel for FY 1998 and FY 1999 include:

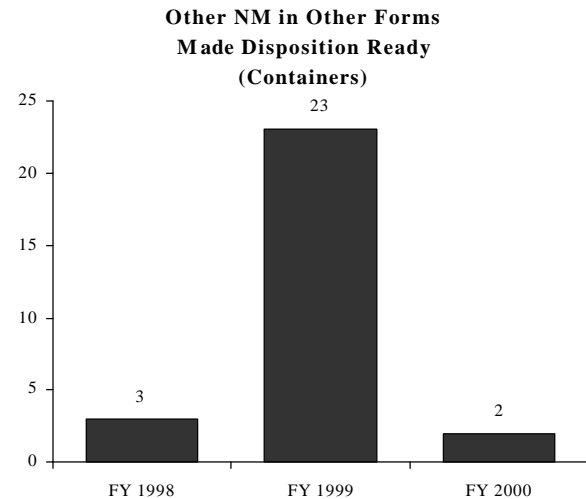
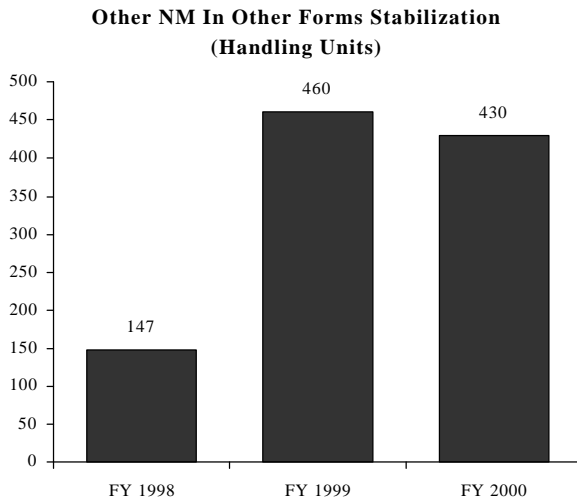
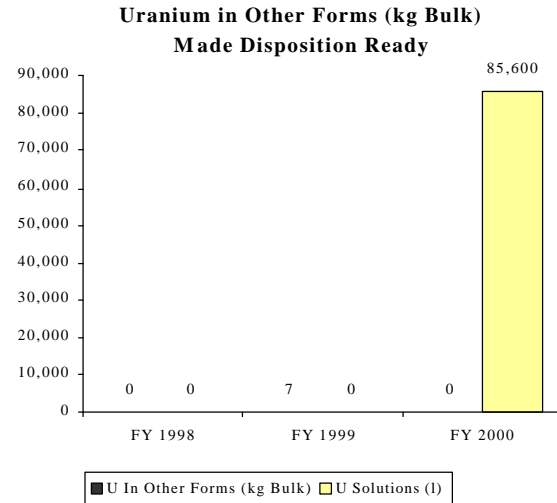
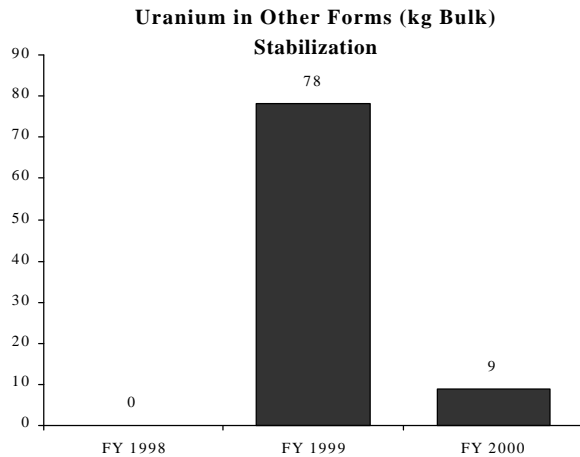
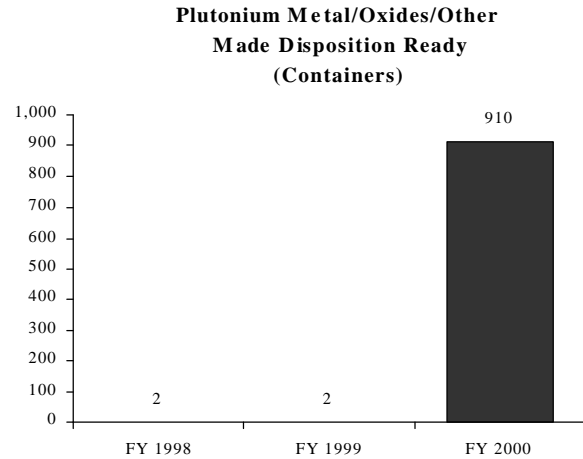
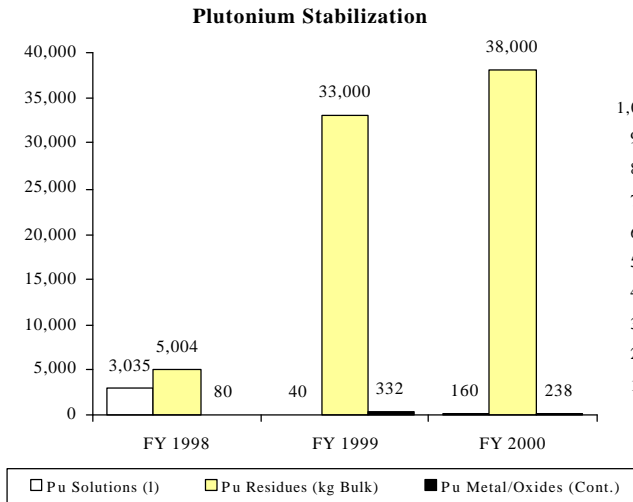
- # Spent Nuclear Fuel Stabilized and Made Disposition Ready
  - ▶ Stabilize approximately 6.015 metric tons of heavy metal of spent nuclear fuel in FY 1999; stabilized 0.753 metric tons of heavy metal of spent nuclear fuel in FY 1998.
  - ▶ Stabilize approximately 0.132 cubic meters of spent nuclear fuel in FY 1999; stabilized 0.332 cubic meters of spent nuclear fuel in FY 1998.
  - ▶ Make disposition-ready 0.091 metric tons of heavy metal of spent nuclear fuel in FY 1998.
  - ▶ Make disposition-ready approximately 16.282 cubic meters of spent nuclear fuel in FY 1999; made disposition-ready 12.028 cubic meters of spent nuclear fuel in FY 1998.



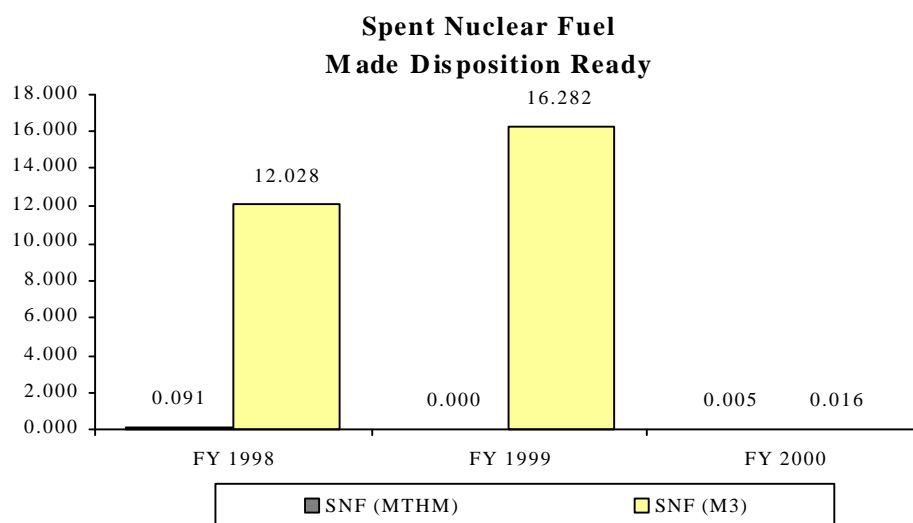
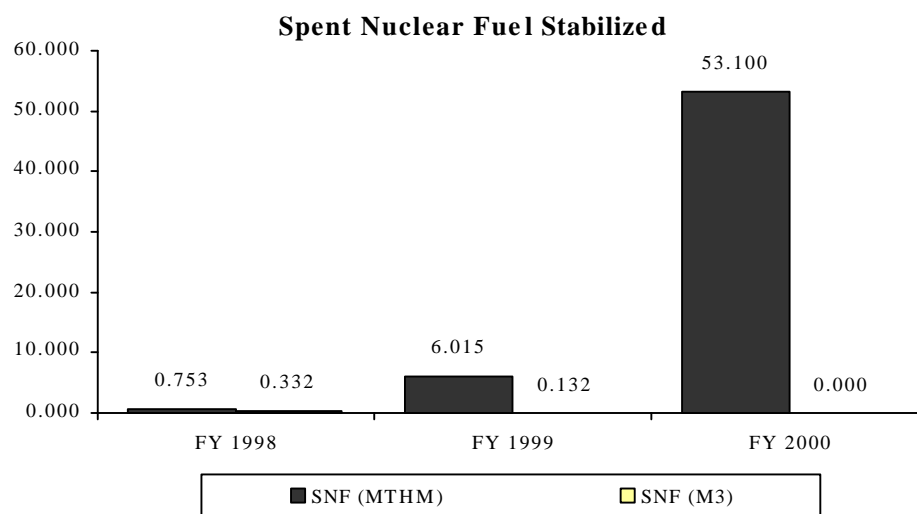
Other significant examples of progress in nuclear material and spent nuclear fuel stabilization include:

- # Drained two areas in Building 371; drained and removed 2 liquid piping systems in Building 771; and stabilized or repackaged 5,004 kg plutonium-bearing residues at the Rocky Flats Environmental Technology Site in Colorado in FY 1998.
- # Completed DOE's first shipment of spent fuel from Asia via the Concord Naval Weapons Station in California to the Idaho National Engineering and Environmental Laboratory in FY 1998.
- # In support of the U.S. non-proliferation policy, completed the transport and receipt of four shipments of foreign research reactor spent nuclear fuel from approximately ten countries to the Savannah River Site in South Carolina in FY 1998.
- # Drain and remove 12 liquid systems in Building 771 at the Rocky Flats Environmental Technology Site in FY 1999.
- # Drain 10 areas in Building 371 at the Rocky Flats Environmental Technology Site in FY 1999.
- # Begin transferring spent nuclear fuel from wet storage in the Test Area North-607 pool at Idaho to the interim dry storage facility in FY 1999.
- # Complete the first cross-country shipment of foreign research reactor Training, Research Irradiation Reactors from General Atomics spent nuclear fuel from Europe to the Idaho National Engineering and Environmental Laboratory via the Charleston Naval Weapons Station in FY 1999.
- # Begin stabilization of plutonium oxide at the Plutonium Finishing Plant at the Hanford Site in Washington in FY 1999.
- # Complete removal of spent nuclear fuel from Facility 7823 on the Oak Ridge Reservation in Tennessee in FY 1999.

# Progress in Nuclear Material Stabilization



# Progress in Spent Nuclear Fuel Stabilization



## **F. Technology Development and Deployment**

EM is implementing initiatives for developing and deploying alternative environmental cleanup, nuclear waste, and spent fuel treatment technologies that reduce cost, resolve currently intractable problems, and/or are more protective of workers and the environment. Developing and deploying alternative technologies supports the DOE Environmental Quality strategic objective to “*reduce the life-cycle costs of environmental cleanup.*” EM’s technology development efforts in FY 2000 concentrate on five major focus areas: (1) Mixed Waste; (2) Tank Waste Remediation; (3) Subsurface Contaminants; (4) Deactivation and Decommissioning; and (5) Plutonium. EM’s measures for assessing technology development and deployment progress are:

- # Number of alternative technologies demonstrated -- Technologies or systems that meet the performance-specification-based needs as identified by the Site Technology Coordinating Groups
- # Number of alternative technologies ready for implementation -- Technologies or systems with cost and engineering performance data.
- # Number of alternative technology deployments -- Deployment is the use of a technology or technology system toward accomplishment of one or more site-specific DOE EM program cleanup objectives as applied to the actual waste requiring management at the site.

### ***FY 2000 Performance Goals for Technology***

Specific performance goals for technology development and deployment for FY 2000 include:

- # Technology Development and Deployment
  - ▶ Demonstrate 30 alternative technology systems that meet the performance-specification-based needs as identified by the Site Technology Coordinating Groups.
  - ▶ Make 30 environmental technology systems ready for implementation with cost and engineering performance data.
  - ▶ Accomplish 60 alternative technology deployments. A goal of 60 deployments is established based on the current rate of technology deployments. Historically, it has proven difficult to quantify longer-term performance goals for deployments due to the nature of the technology work scope and variations in timing and magnitude of the deploying EM program’s work scope.

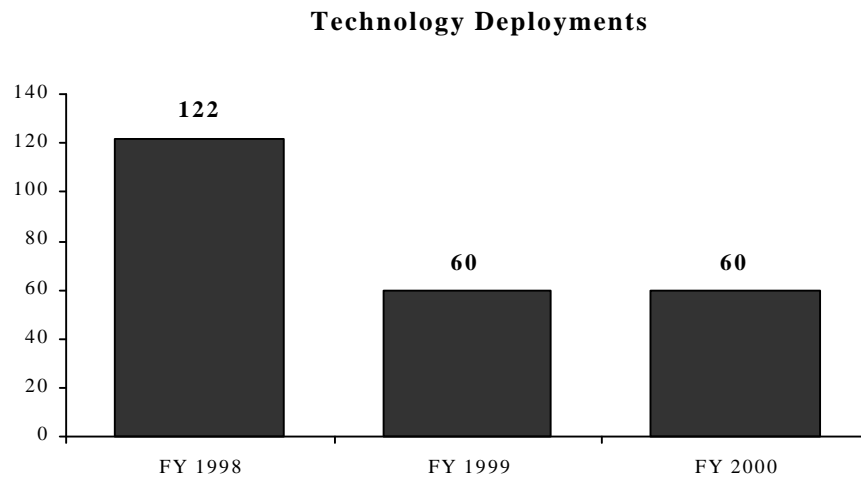
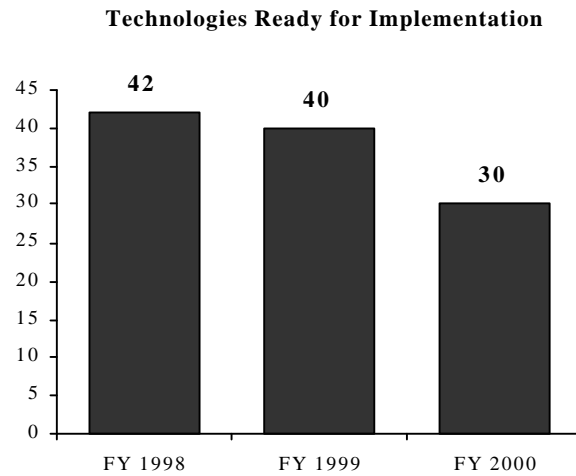
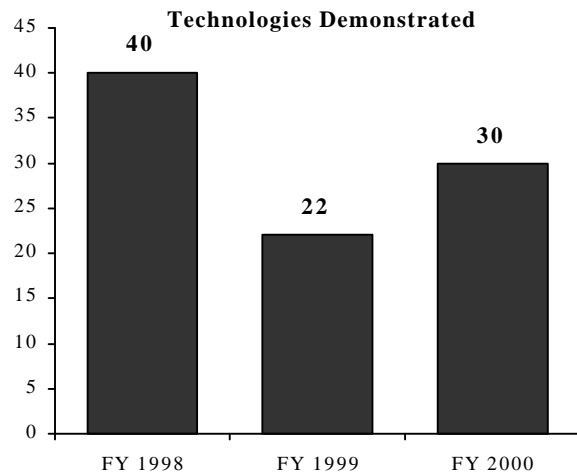
### ***Technology Progress***

Examples of progress in Technology Development and Deployment during FY 1998 and FY 1999 include:

- # Initiated a deployment support effort designed to incentivize widespread use of available cost- and schedule-reducing alternative technologies, thereby accelerating cleanup and maximizing cost avoidance. More than 30 accelerated site technology deployment projects have been competitively selected in FY 1999. Fourteen high-potential deployment projects were competitively selected and initiated in FY 1998.

- # Demonstrate 22 alternative technology systems that meet Site Technology Coordination Group-identified needs in FY 1999. Demonstrated 40 alternative technology systems in FY 1998, including technologies for use in retrieving solid waste from the Hanford Tanks that remains after the liquid waste has been removed.
- # Make 40 alternative technology systems ready for implementation in FY 1999. Made 42 alternative technology systems ready for implementation with cost and engineering performance information in FY 1998, including a sensor that measures the direction and force of groundwater flow, providing valuable information on groundwater movement which is critical in locating and designing, and monitoring waste disposal sites.
- # Accomplish 60 innovative technology deployments in FY 1999. Deployed alternative technologies in 122 instances during cleanup projects in FY 1998.
- # Solicited, peer reviewed and awarded new EM Science Program grants in the areas of Deactivation and Decommissioning and High-Level Waste in FY 1998. This basic longer-term research is aimed at DOE's most intractable problems.

# Progress in Technology Development and Deployment



## NOTES

1. FY 1999 is based on the FY 1999 Appropriation.
2. FY 2000 is based on the FY 2000 Request. The goal of 60 deployments is established based on the current rate of technology deployments.

## G. Corporate Performance Measures - EM Program Totals

This section provides corporate performance measures aggregated to a total EM program level. These roll-ups are supported by detailed information included within the FY 2000 Budget that depict performance measures and goals for FY 1998, FY 1999, and FY 2000. The budget details are provided by appropriation, program account (e.g., Site Closure, Site/Project Completion, and Post 2006 Completion), Operations/Field Office (and/or site), and Project Baseline Summary performance measures. EM will continue to improve its performance-based budgeting process and the quality of its performance data over the coming year.

Please note the following when reviewing the tables which follow:

- # **Release Sites/Facilities:** The sequence and priority in which release sites and facilities at each geographic site are cleaned up vary. The level of effort and resources required to complete EM's release sites and facilities depend upon the urgency, complexity, risk, size of the particular release site and/or facility, and a variety of other factors. Some areas require more characterization and some facilities are much more difficult to cleanup than others. Typically, the simpler release site/facilities are cleaned up first, leaving the more complicated (and generally more costly) activities for later. These more complex areas/facilities may take several years to complete and may also require more time due to resource constraints. Therefore, comparisons between release sites and facility completions both within a particular site, across sites, and from year-to-year, will not provide a good indicator of program progress.
- # **Waste:** These tables focus on high-level, transuranic, mixed low-level, and low-level waste progress. Hazardous waste and/or other waste accomplishment data are not reflected in these summary tables. However, in most cases, they are included in the supporting budget narratives. Volume of waste "stored" values represent the inventory status as of the last day of the fiscal year for the "FY 1998 Actual", the "FY 1999 Planned", and "FY 2000 Planned".

## Corporate Performance Measures - EM Program Totals <sup>a</sup>

	FY 1998 Actual	FY 1999 Planned	FY 2000 Planned	Life-cycle
<b>Release Sites and Facilities</b>				
Number of Completed Release Site Assessments .....	583	313	761	n/a
Number of Release Site Completions .....	290	165	201	6,362
Number of Completed Facility Decommissioning Assessments .....	89	122	346	n/a
Number of Facilities Decommissioned .....	108	81	110	3,092
Number of Facilities Deactivated .....	70	65	60	1,928
<b>Waste Treatment, Storage and Disposal</b>				
Volume of High-Level Waste Treated (m <sup>3</sup> ) .....	2,411	1,528	1,439	1,495,343
Volume of High-Level Waste Stored (m <sup>3</sup> ) .....	342,062	342,645	355,034	n/a
Number of High-Level Waste Canisters Produced .....	331	215	105	5,344-5,384
Volume of Transuranic Waste Treated (m <sup>3</sup> ) .....	90	358	657	136,017
Volume of Transuranic Waste Stored (m <sup>3</sup> ) .....	107,339	110,408	109,470	n/a
Volume of Transuranic Waste Disposed at a DOE Site (m <sup>3</sup> ) <sup>b</sup> .....	0	1,320	3,376	174,562
Volume of Transuranic Waste Shipped to DOE Disposal Site (m <sup>3</sup> ) <sup>c</sup> ..	229	748	3,462	86,356
Volume of Mixed Low-Level Waste Treated (m <sup>3</sup> ) .....	11,048	11,009	10,310	199,747
Volume of Mixed Low-Level Waste Stored (m <sup>3</sup> ) .....	61,128	46,752	34,913	n/a
Volume of Mixed Low-Level Waste Disposed On-site or Commercially (m <sup>3</sup> ) .....	10,727	15,591	15,447	306,741
Volume of Mixed Low-Level Waste Shipped to DOE Disposal Site (m <sup>3</sup> ) .....	159	1,033	116	13,607
Volume of Low-Level Waste Treated (m <sup>3</sup> ) .....	15,375	21,559	9,839	1,467,847
Volume of Low-Level Waste Stored (m <sup>3</sup> ) .....	242,675	212,435	213,909	n/a
Volume of Low-Level Waste Disposed On-site or Commercially (m <sup>3</sup> )	29,762	73,520	79,043	2,090,363
Volume of Low-Level Waste Shipped to DOE Disposal Site (m <sup>3</sup> ) ....	9,727	16,911	17,418	149,011
<b>Nuclear Material and Spent Nuclear Fuel</b>				
Nuclear Material Stabilized - Pu Solution (l) .....	3,035	40	160	38,300
Nuclear Material Stabilized - Pu Residue (kg bulk) .....	5,004	32,887	38,470	107,588
Nuclear Material Stabilized - Pu Metal/Oxides (Containers) .....	80	332	238	4,264
Nuclear Material Stabilized - U Solution (l) .....	0	0	0	0
Nuclear Material Stabilized - U in Other Forms (kg bulk) .....	0	78	9	96
Nuclear Material Stabilized - Other NM in Solution Form (l) .....	0	0	0	34,192
Nuclear Material Stabilized - Other NM Forms (Handling Units) .....	147	459	432	18,867
Nuclear Material Made Disposition-Ready - Pu Metal/Oxides/Other (Containers) .....	2	2	910	1,800
Nuclear Material Made Disposition-Ready On-site - U Solution (l) ....	0	0	85,608	2,450,604

<sup>a</sup> Life-cycle estimates for release sites, facilities, nuclear material, and spent nuclear fuel are from FY 1997 through FY 2070. Waste type estimates are from FY 1998 through FY 2070, with the exception of high-level waste canisters produced which are from FY 1996 through FY 2070. Life-cycle estimates will be updated in the Spring 1999 update of EM's corporate database.

<sup>b</sup> Reflects the disposal capability at the Waste Isolation Pilot Plant located in Carlsbad, New Mexico.

<sup>c</sup> FY 1999 and FY 2000 reflect disposal-ready volumes and shipments to the Waste Isolation Pilot Plant. FY 1998 reflects disposal-ready volumes only.



	FY 1998 Actual	FY 1999 Planned	FY 2000 Planned	Life-cycle
Nuclear Material Made Ready Ship Off-site - U Solution (l) . . . . .	0	0	0	0
Nuclear Material Made Disposition-Ready On-site - U in Other Forms (kg bulk) . . . . .	0	7	0	1,860,000
Nuclear Material Made Disposition-Ready Ship Off-site-U in Other Forms (kg bulk) . . . . .	204,002	4,386,000	2,609,000	TBD
Nuclear Material Made Disposition-Ready - Other NM Solution (l) . . .	0	0	0	492
Nuclear Material Made Disposition-Ready - Other Forms of NM (Containers) . . . . .	3	23	2	n/a
Spent Nuclear Fuel Stabilized (MTHM) . . . . .	0.753	6.015	53.100	2,477.000
Spent Nuclear Fuel Stabilized (m <sup>3</sup> ) . . . . .	0.332	0.132	0.000	n/a
Spent Nuclear Fuel Made Disposition-Ready (MTHM) . . . . .	0.091	0.000	0.005	n/a
Spent Nuclear Fuel Made Disposition-Ready (m <sup>3</sup> ) . . . . .	12.028	16.282	0.016	n/a
Spent Nuclear Fuel In Disposition-Ready Storage (MTHM) . . . . .	0.000	0.151	0.197	28.600
Spent Nuclear Fuel In Disposition-Ready Storage (m <sup>3</sup> ) . . . . .	0.000	0.256	0.675	28.900
Number of Innovative Technology Deployments . . . . .	122	60	60	n/a

## VIII. ANCILLARY TABLES

## Environmental Management

### Funding by Installation

(dollars in thousands)

	FY 1998 Current Appropriation	FY 1999 Current Appropriation	FY 2000 Request
<b>Albuquerque</b>			
Albuquerque Operations Office . . . . .	18,120	8,080	5,550
Grand Junction Office . . . . .	47,573	42,613	31,700
Kansas City Plant . . . . .	3,513	1,756	1,100
Los Alamos National Laboratory . . . . .	131,315	81,574	110,834
Lovelace Biomedical & Environmental Research Institute . . .	789	478	481
Pantex Plant . . . . .	23,243	11,299	15,000
Pinellas Plant . . . . .	2,318	2,797	5,500
Sandia National Laboratories . . . . .	48,368	27,260	19,435
UMTRA - Groundwater . . . . .	5,559	5,902	13,000
UMTRA - Surface . . . . .	35,936	20,782	0
<b>Total, Albuquerque . . . . .</b>	<b>316,734</b>	<b>202,541</b>	<b>202,600</b>
 Carlsbad . . . . .	 173,700	 185,404	 186,404
 <b>Chicago</b>			
Ames Laboratory . . . . .	363	306	260
Argonne National Laboratory-East . . . . .	15,921	18,170	19,761
Argonne National Laboratory-West . . . . .	3,630	1,142	809
Brookhaven National Laboratory . . . . .	26,137	30,001	29,553
Chicago Operations Office . . . . .	435	1,101	644
Princeton Plasma Physics Laboratory . . . . .	3,290	3,343	3,073
<b>Total, Chicago . . . . .</b>	<b>49,776</b>	<b>54,063</b>	<b>54,100</b>
 <b>Idaho</b>			
Idaho National Engineering & Environmental Laboratory <sup>a</sup> . . .	415,556	435,642	409,422
 <b>Nevada</b>			
Nevada Operations Office . . . . .	3,933	7,036	8,634
Nevada Test Site . . . . .	64,985	73,045	76,673
<b>Total, Nevada . . . . .</b>	<b>68,918</b>	<b>80,081</b>	<b>85,307</b>

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<sup>a</sup> The Idaho Program for FY 2000 also includes the use of \$43 million in prior year balances for Pit 9 activities, for a total program level of \$452.422 million.

(dollars in thousands)

	FY 1998 Current Appropriation	FY 1999 Current Appropriation	FY 2000 Request
<b>Oak Ridge</b>			
Oak Ridge National Laboratory .....	49,439	59,677	57,805
Oak Ridge Off-Site Locations .....	53,131	22,516	23,839
Oak Ridge Operations Office .....	5,027	8,809	10,930
Oak Ridge Reservation .....	290,340	275,957	310,987
Paducah Gaseous Diffusion Plant .....	39,582	35,983	37,500
Portsmouth Gaseous Diffusion Plant .....	43,053	35,119	37,500
Weldon Spring Site .....	66,686	63,500	52,000 <sup>a</sup>
<b>Total, Oak Ridge .....</b>	<b>547,258</b>	<b>501,561</b>	<b>530,561</b>
<b>Oakland</b>			
Energy Technology Engineering Center .....	17,625	16,494	17,398
General Atomics .....	4,280	2,030	1,100
General Electric .....	0	313	500
Laboratory for Energy-Related Health Research .....	6,802	4,389	3,863
Lawrence Berkeley National Laboratory .....	9,265	10,668	11,098
Lawrence Livermore National Laboratory .....	54,210	49,214	49,891
Oakland Operations Office .....	2,279	2,700	1,100
Separations Process Research Unit .....	0	0	500
Stanford Linear Accelerator Center .....	1,006	1,000	1,400
<b>Total, Oakland .....</b>	<b>95,467</b>	<b>86,808</b>	<b>86,850</b>
<b>Ohio</b>			
Ashtabula .....	14,637	15,405	15,405
Columbus .....	12,567	12,125	16,134
Fernald .....	258,700	274,002	280,589
Miamisburg .....	86,622	88,949	93,353
Ohio Field Office .....	0	94	94
West Valley .....	113,746	107,353	107,353
<b>Total, Ohio .....</b>	<b>486,272</b>	<b>497,928</b>	<b>512,928</b>
<b>Richland</b>			
Hanford Site .....	906,861	953,001	1,028,280
Richland Operations Office .....	44,536	45,491	36,831
<b>Total, Richland .....</b>	<b>951,397</b>	<b>998,492</b>	<b>1,065,111</b>
<b>Rocky Flats</b>			
Rocky Flats Environmental Technology Site .....	611,303	638,397	637,132
Rocky Flats Field Office .....	20,797	18,803	20,078
<b>Total, Rocky Flats .....</b>	<b>632,100</b>	<b>657,200</b>	<b>657,210</b>

<sup>a</sup> It is the intent of the Environmental Management Program to fund the Weldon Spring Site Remedial Action Project at a program level of \$63.5 million. The program will work to identify funding sources for this important activity.

(dollars in thousands)

	FY 1998 Current Appropriation	FY 1999 Current Appropriation	FY 2000 Request
Savannah River			
Savannah River Operations Office .....	28,117	33,157	30,280
Savannah River Site .....	1,099,806	1,181,789	1,192,220
Total, Savannah River .....	1,127,923	1,214,946	1,222,500
D&D Fund Deposit .....	388,000	398,088	420,000
Uranium/Thorium Reimbursement .....	40,000	30,000	30,000
Multi-Site .....	113,053	85,542	77,098
Program Direction .....	345,000	337,073	349,409
Science and Technology .....	269,213	243,156	230,500
Subtotal, EM .....	6,020,367	6,008,525	6,120,000
FFTF (transferred to Nuclear Energy in FY 1999) .....	41,727	0	0
Y2K Supplemental Appropriation .....	0	13,840	0
Use of Prior Year Balances .....	-11,253	-20,658	0
D&D Fund Deposit (Offset) .....	-388,000	-398,088	-420,000
Total, Traditional Budget Authority .....	5,662,841	5,603,619	5,700,000
Privatization .....	200,000	228,357	228,000
Total, EM .....	5,862,841	5,831,976	5,928,000

## Environmental Management

### Defense Environmental Management Privatization

(dollars in thousands)

	FY 1998 Comparable Appropriation	FY 1999 Current Appropriation	FY 2000 Request
Carlsbad Area Office			
Remote-Handled Transuranic Waste . . . . .	21,000	19,605	0
Idaho Operations Office			
Spent Nuclear Fuel Dry Storage . . . . .	27,000	20,000	5,000
Advanced Mixed Waste Treatment . . . . .	0	87,252	110,000
Subtotal, Idaho . . . . .	27,000	107,252	115,000
Oak Ridge Operations Office			
On-Site Disposal Facility . . . . .	5,000	33,500	20,000
Transuranic Waste Treatment . . . . .	0	0	12,000
Subtotal, Oak Ridge . . . . .	5,000	33,500	32,000
Richland Operations Office			
Tank Waste Remediation System . . . . .	115,000	100,000	106,000
Savannah River Operations Office			
Spent Nuclear Fuel Transfer and Storage . . . .	25,000	0	0
Undistributed <sup>a</sup> . . . . .	7,000	0	0
Subtotal, Defense EM Privatization . . . . .	200,000	260,357	253,000
Use of Prior Year Balances . . . . .	0	-32,000	-25,000
Total, Defense EM Privatization . . . . .	200,000	228,357	228,000

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<sup>a</sup> The distribution specified in the National Defense Authorization Act for Fiscal Year 1998 did not provide for distribution of \$7 million.

## Funding Estimates by Performance Measure <sup>a</sup>

(dollars in thousands)

	FY 1998 Current Appropriation	FY 1999 Current Appropriation	FY 2000 Request
Release Sites			
Assessment .....	182,420	97,828	121,799
Cleanup .....	544,298	564,040	535,019
Disposal Facility (Design/Construction/Operation) .....	18,720	37,569	41,161
Groundwater Remediation .....	70,211	94,338	111,902
Potentially Responsible Party Payments .....	8,253	1,804	1,944
Post-Remediation Long-Term Surveillance & Maintenance .....	12,944	18,624	22,947
Provision of Alternative Water Supply .....	4,658	4,217	4,312
Facility Decommissioning			
Assessment .....	19,337	17,468	15,704
Cleanup .....	166,848	170,695	203,944
Pre-Decommissioning Surveillance & Maintenance .....	39,784	35,841	38,805
All Other Waste Types <sup>b</sup>			
All Other Waste Types .....	73,260	85,691	92,616
Construction .....	8,339	1,032	440
Hazardous Waste			
Construction .....	9,185	1,650	700
DOE On-Site Disposal .....	46,844	35,121	34,180
High-Level Waste			
Canisters Produced .....	0	30,753	29,553
Construction .....	51,003	91,462	53,628
Storage .....	329,625	333,404	389,160
Treatment (includes TWRS privatization) .....	505,145	374,043	418,008
Low-Level Waste			
Construction .....	5,542	817	2,840
On-Site/Commercial Disposal .....	55,463	25,763	24,186
Ship to DOE Disposal .....	13,187	28,951	31,900
Storage .....	38,335	33,844	42,225
Treatment .....	68,222	44,371	28,883

<sup>a</sup> This table presents the total estimated budget authority by performance measure category (e.g., Transuranic Waste, Release Sites, Nuclear Material Stabilization, etc.) and "other" activities (e.g., operational activities, etc.) *below* the Project Baseline Summary level. The table reflects only an estimate of the budget authority associated with key program activities related to waste management, remediation, facility deactivation, and nuclear material and spent nuclear fuel stabilization. The budget authority provided for these performance measures and "other" activities are estimates only and are therefore not of auditable quality. The total budget authority reported for each Project Baseline Summary in the main line budget is of audit quality consistent with EM's project-based management approach.

<sup>b</sup> Includes waste that is not classified as high-level waste, transuranic waste, hazardous waste, low-level waste, or mixed low-level waste.

(dollars in thousands)

	FY 1998 Current Appropriation	FY 1999 Current Appropriation	FY 2000 Request
Mixed Low-Level Waste			
Construction .....	7,240	2,355	420
On-Site/Commercial Disposal .....	55,287	62,899	79,146
Ship to DOE Disposal .....	67	2,679	3,318
Storage .....	60,738	39,961	52,094
Treatment .....	146,276	97,578	91,864
Transuranic Waste			
Construction .....	2,043	1,569	2,100
On-Site/Commercial Disposal .....	195,723	207,031	187,629
Ship to DOE Disposal .....	4,388	9,953	9,951
Storage .....	86,336	76,309	89,768
Treatment .....	20,027	127,081	158,496
Facility Deactivation			
Construction .....	2,400	0	0
Deactivation .....	80,177	64,609	40,015
Post-Deactivation Long-Term Monitoring .....	13,246	10,819	15,271
Surveillance & Maintenance .....	117,529	136,388	143,222
Nuclear Materials			
Construction .....	21,136	93,550	20,860
Stabilization .....	465,542	496,663	561,990
Spent Nuclear Fuel			
Construction .....	21,744	40,794	41,396
Surveillance & Maintenance .....	208,615	214,729	257,963
Stabilization .....	129,662	97,749	73,998
Science & Technology			
Risk Policy .....	7,000	9,000	5,000
Science Program .....	46,109	47,000	32,000
Technology .....	216,104	187,156	193,500
Operational Activities			
Agreements in Principle/Grants .....	24,553	16,903	15,498
UE D&D Fund Deposit .....	388,000	398,088	420,000
Intergovernmental Affairs .....	6,800	5,800	6,970
Landlord .....	693,479	750,288	694,876
Other Project-Related Bridge Costs .....	0	11,556	19,861
Security Investigations .....	0	4,806	9,446
Technical Support .....	492,587	489,564	465,866
Technical Training & Education .....	1,000	900	961
Uranium Leasing .....	342	1,406	400
Uranium/Thorium Reimbursement .....	40,000	30,000	30,000



(dollars in thousands)

	FY 1998 Current Appropriation	FY 1999 Current Appropriation	FY 2000 Request
National Programs			
Analytical Management . . . . .	5,205	3,000	3,000
Emergency Preparedness . . . . .	3,259	3,218	2,849
Environmental & Regulatory Analysis . . . . .	1,501	518	300
Packaging Certification . . . . .	4,648	3,756	3,716
Pollution Prevention . . . . .	24,472	12,890	7,238
Program Direction . . . . .	345,000	337,073	349,409
Transportation & Packaging Management . . . . .	10,509	11,918	11,753
Subtotal, EM (including Privatization) . . . . .	6,220,367	6,236,882	6,348,000
Use of Prior Year Balances . . . . .	-11,253	-20,658	0
Y2K Supplemental Appropriation . . . . .	0	13,840	0
FFTF (transferred to Nuclear Energy in FY99) . . . . .	41,727	0	0
D&D Fund Deposit (Offset) . . . . .	-388,000	-398,088	-420,000
Total, EM . . . . .	5,862,841	5,831,976	5,928,000

## EM Corporate Performance Measures <sup>a</sup>

### Operations/Field Office Totals

	FY 1998 Actual	FY 1999 Planned	FY 2000 Planned	Life-cycle
<b>Albuquerque</b>				
Number of Completed Release Site Assessments	73	9	14	n/a
Number of Release Site Completions	89	29	43	1,093
Number of Completed Facility Decommissioning Assessments	0	0	10	n/a
Number of Facilities Decommissioned	5	4	13	153
Number of Facilities Deactivated	0	0	0	4
Volume of Transuranic Waste Treated (m <sup>3</sup> )	0	0	0	23,005
Volume of Transuranic Waste Stored (m <sup>3</sup> )	9,168	9,142	9,142	n/a
Volume of Transuranic Waste Shipped to DOE Disposal Site (m <sup>3</sup> ) <sup>b</sup>	194	0	0	9,168
Volume of Mixed Low-Level Waste Treated (m <sup>3</sup> )	74	0	0	2,334
Volume of Mixed Low-Level Waste Stored (m <sup>3</sup> )	527	381	302	n/a
Volume of Mixed Low-Level Waste Disposed On-site or Commercially (m <sup>3</sup> )	141	79	53	4,729
Volume of Mixed Low-Level Waste Shipped to DOE Disposal Site (m <sup>3</sup> )	1	0	0	144
Volume of Low-Level Waste Treated (m <sup>3</sup> )	82	30	30	6,153
Volume of Low-Level Waste Stored (m <sup>3</sup> )	998	0	0	n/a
Volume of Low-Level Waste Disposed On-site or Commercially (m <sup>3</sup> )	1,314	0	0	6,410
Volume of Low-Level Waste Shipped to DOE Disposal Site (m <sup>3</sup> )	575	0	0	3,889
<b>Carlsbad</b>				
Volume of Transuranic Disposed at a DOE Site (m <sup>3</sup> ) <sup>c</sup>	0	1,320	3,376	174,562
<b>Chicago</b>				
Number of Completed Release Site Assessments	24	14	5	n/a
Number of Release Site Completions	20	8	14	117
Number of Completed Facility Decommissioning Assessments	23	0	1	n/a
Number of Facilities Decommissioned	8	2	11	56
Volume of Transuranic Waste Treated (m <sup>3</sup> )	11	85	85	970
Volume of Transuranic Waste Stored (m <sup>3</sup> )	90	92	94	n/a
Volume of Transuranic Waste Shipped to DOE Disposal Site (m <sup>3</sup> ) <sup>b</sup>	0	2	2	142
Volume of Mixed Low-Level Waste Treated (m <sup>3</sup> )	41	31	31	2,460
Volume of Mixed Low-Level Waste Stored (m <sup>3</sup> )	155	157	153	n/a
Volume of Mixed Low-Level Waste Disposed On-site or Commercially (m <sup>3</sup> )	3	11	18	2,110

<sup>a</sup> Life-cycle estimates for release sites, facilities, nuclear material, and spent nuclear fuel are from FY 1997 through FY 2070. Waste type estimates are from FY 1998 through FY 2070, with the exception of high-level waste canisters produced which are from FY 1996 through FY 2070. Life-cycle estimates will be updated in the Spring 1999 update of EM's corporate database.

<sup>b</sup> FY 1999 and FY 2000 reflect disposal-ready volumes and shipments to the Waste Isolation Pilot Plant. FY 1998 reflects disposal-ready volumes only.

<sup>c</sup> Reflects the available disposal capacity at the Waste Isolation Pilot Plant in Carlsbad, New Mexico

	FY 1998 Actual	FY 1999 Planned	FY 2000 Planned	Life-cycle
Volume of Mixed Low-Level Waste Shipped to DOE Disposal Site (m <sup>3</sup> )	0	0	0	96
Volume of Low-Level Waste Treated (m <sup>3</sup> )	619	1,053	1,051	94,901
Volume of Low-Level Waste Stored (m <sup>3</sup> )	334	214	81	n/a
Volume of Low-Level Waste Disposed On-site or Commercially (m <sup>3</sup> )	118	174	228	27,832
Volume of Low-Level Waste Shipped to DOE Disposal Site (m <sup>3</sup> )	425	574	492	32,507
Idaho				
Number of Completed Release Site Assessments	15	38	58	n/a
Number of Release Site Completions	7	11	43	155
Number of Completed Facility Decommissioning Assessments	2	5	15	n/a
Number of Facilities Decommissioned	4	8	11	212
Number of Facilities Deactivated	1	1	1	53
Volume of High-Level Waste Treated (m <sup>3</sup> )	760	732	1,041	146,688
Volume of High-Level Waste Stored (m <sup>3</sup> )	9,367	9,062	8,085	n/a
Volume of Transuranic Waste Treated (m <sup>3</sup> )	0	0	0	61,724
Volume of Transuranic Waste Stored (m <sup>3</sup> )	65,000	64,990	63,975	n/a
Volume of Transuranic Waste Shipped to DOE Disposal Site (m <sup>3</sup> ) <sup>a</sup>	0	10	1,015	30,000
Volume of Mixed Low-Level Waste Treated (m <sup>3</sup> )	226	113	113	13,822
Volume of Mixed Low-Level Waste Stored (m <sup>3</sup> )	1,714	1,123	697	n/a
Volume of Mixed Low-Level Waste Disposed On-site or Commercially (m <sup>3</sup> )	13	50	50	3,788
Volume of Mixed Low-Level Waste Shipped to DOE Disposal Site (m <sup>3</sup> )	21	0	0	1,072
Volume of Low-Level Waste Treated (m <sup>3</sup> )	3,690	5,200	1,464	185,852
Volume of Low-Level Waste Stored (m <sup>3</sup> )	6,035	2,000	3,385	n/a
Volume of Low-Level Waste Disposed On-site or Commercially (m <sup>3</sup> )	3,264	6,500	4,329	93,885
Volume of Low-Level Waste Shipped to DOE Disposal Site (m <sup>3</sup> )	2	0	0	TBD
Spent Nuclear Fuel Stabilized (MTHM)	0.510	6.000	53.100	346.000
Nevada				
Number of Completed Release Site Assessments	34	64	18	n/a
Number of Release Site Completions	31	34	37	1,675
Number of Facilities Decommissioned	1	0	0	1
Number of Facilities Deactivated	0	0	0	7
Volume of Transuranic Waste Treated (m <sup>3</sup> )	78	91	180	TBD
Volume of Transuranic Waste Stored (m <sup>3</sup> )	671	671	394	n/a
Volume of Transuranic Waste Shipped to DOE Disposal Site (m <sup>3</sup> ) <sup>a</sup>	0	0	277	676
Volume of Mixed Low-Level Waste Treated (m <sup>3</sup> )	13	0	0	15
Volume of Mixed Low-Level Waste Stored (m <sup>3</sup> )	13	0	0	n/a
Volume of Mixed Low-Level Waste Disposed On-site or Commercially (m <sup>3</sup> )	264	0	0	264
Volume of Low-Level Waste Disposed On-site or Commercially (m <sup>3</sup> )	11,059	37,742	64,164	412,892

<sup>a</sup> FY 1999 and FY 2000 reflect disposal-ready volumes and shipments to the Waste Isolation Pilot Plant. FY 1998 reflects disposal-ready volumes only.

	FY 1998 Actual	FY 1999 Planned	FY 2000 Planned	Life-cycle
Ohio <sup>a</sup>				
Number of Completed Release Site Assessments	3	3	4	n/a
Number of Release Site Completions	3	0	7	150
Number of Completed Facility Decommissioning Assessments	23	8	14	n/a
Number of Facilities Decommissioned	22	11	15	148
Number of Facilities Deactivated	38	6	13	139
Volume of High-Level Waste Treated (m <sup>3</sup> )	780	100	50	396,612
Volume of High-Level Waste Stored (m <sup>3</sup> )	182	82	32	n/a
Number of High-Level Waste Canisters Produced	81	15	5	260-300
Volume of Transuranic Waste Treated (m <sup>3</sup> )	0	0	0	792
Volume of Transuranic Waste Stored (m <sup>3</sup> )	775	779	783	n/a
Volume of Transuranic Waste Shipped to DOE Disposal Site (m <sup>3</sup> ) <sup>b</sup>	0	0	0	247
Volume of Mixed Low-Level Waste Treated (m <sup>3</sup> )	150	9	12	409
Volume of Mixed Low-Level Waste Stored (m <sup>3</sup> )	168	147	142	n/a
Volume of Mixed Low-Level Waste Disposed On-site or Commercially (m <sup>3</sup> )	1	532	13	TBD
Volume of Mixed Low-Level Waste Shipped to DOE Disposal Site (m <sup>3</sup> )	0	0	0	523
Volume of Low-Level Waste Treated (m <sup>3</sup> )	0	1,500	1,000	TBD
Volume of Low-Level Waste Stored (m <sup>3</sup> )	45,023	20,442	17,405	n/a
Volume of Low-Level Waste Disposed On-site or Commercially (m <sup>3</sup> )	106	10,016	428	TBD
Volume of Low-Level Waste Shipped to DOE Disposal Site (m <sup>3</sup> )	2,649	8,895	9,293	TBD
Nuclear Material Made Disposition-Ready - Pu Metal/Oxides/Other (Containers)	2	2	0	n/a
Nuclear Material Made Disposition-Ready On-site - U in Other Forms (kg bulk)	0	7	0	n/a
Nuclear Material Made Disposition-Ready Ship Off-site - U in Other Forms (kg bulk)	204,002	4,386,000	2,609,000	n/a
Nuclear Material Made Disposition-Ready - Other Forms of NM (Containers)	2	23	2	n/a
Oakland				
Number of Completed Release Site Assessments	35	8	16	n/a
Number of Release Site Completions	23	8	16	195
Number of Completed Facility Decommissioning Assessments	4	2	0	n/a
Number of Facilities Decommissioned	5	1	2	41
Number of Facilities Deactivated	0	0	0	118
Volume of Transuranic Waste Treated (m <sup>3</sup> )	0	0	2	1,187
Volume of Transuranic Waste Stored (m <sup>3</sup> )	301	309	307	n/a
Volume of Transuranic Waste Shipped to DOE Disposal Site (m <sup>3</sup> ) <sup>b</sup>	0	0	2	1,133
Volume of Mixed Low-Level Waste Treated (m <sup>3</sup> )	213	150	265	8,556
Volume of Mixed Low-Level Waste Stored (m <sup>3</sup> )	639	724	807	n/a
Volume of Mixed Low-Level Waste Disposed On-site or Commercially (m <sup>3</sup> )	269	203	149	1,751

<sup>a</sup> In addition to the Corporate Performance Measures listed above, the Ohio Field Office plans to dispose on-site or commercially remediation wastes generated as a result of remedial action and decontamination and decommissioning activities totaling 221,871 cubic meters in FY 1999 and 148,227 cubic meters in FY 2000.

<sup>b</sup> FY 1999 and FY 2000 reflect disposal-ready volumes and shipments to the Waste Isolation Pilot Plant. FY 1998 reflects disposal-ready volumes only.

	FY 1998 Actual	FY 1999 Planned	FY 2000 Planned	Life-cycle
Volume of Mixed Low-Level Waste Shipped to DOE Disposal Site (m <sup>3</sup> )	4	1	0	1,335
Volume of Low-Level Waste Treated (m <sup>3</sup> )	173	61	53	6,203
Volume of Low-Level Waste Stored (m <sup>3</sup> )	6,064	6,165	5,084	n/a
Volume of Low-Level Waste Disposed On-site or Commercially (m <sup>3</sup> )	214	1,446	242	23,429
Volume of Low-Level Waste Shipped to DOE Disposal Site (m <sup>3</sup> )	3,304	1,863	1,983	43,566
Oak Ridge				
Number of Completed Release Site Assessments	42	90	189	n/a
Number of Release Site Completions	46	28	17	733
Number of Completed Facility Decommissioning Assessments	3	15	304	n/a
Number of Facilities Decommissioned	5	8	2	446
Number of Facilities Deactivated	0	0	10	36
Volume of Transuranic Waste Treated (m <sup>3</sup> )	1	0	0	3,346
Volume of Transuranic Waste Stored (m <sup>3</sup> )	2,348	2,389	2,545	n/a
Volume of Mixed Low-Level Waste Treated (m <sup>3</sup> )	3,002	4,139	2,019	82,349
Volume of Mixed Low-Level Waste Stored (m <sup>3</sup> )	38,506	23,945	18,964	n/a
Volume of Mixed Low-Level Waste Disposed On-site or Commercially (m <sup>3</sup> )	3,511	11,830	6,014	109,417
Volume of Mixed Low-Level Waste Shipped to DOE Disposal Site (m <sup>3</sup> )	133	1,032	116	10,254
Volume of Low-Level Waste Treated (m <sup>3</sup> )	3,399	2,298	2,446	779,223
Volume of Low-Level Waste Stored (m <sup>3</sup> )	156,425	159,966	162,071	n/a
Volume of Low-Level Waste Disposed On-site or Commercially (m <sup>3</sup> )	3,344	1,946	2,537	249,243
Volume of Low-Level Waste Shipped to DOE Disposal Site(m <sup>3</sup> )	104	2,949	3,600	2,305
Nuclear Material Stabilized - Other NM in Solution Form (l)	0	0	0	492
Nuclear Material Stabilized - Other NM Forms (Handling Units)	0	0	0	8
Nuclear Material Made Disposition-Ready - Other NM Solution (l)	0	0	0	492
Nuclear Material Made Disposition-Ready -Other Forms of NM (Containers)	1	0	0	4
Spent Nuclear Fuel Stabilized (MTHM)	0.013	0.015	0.000	1.000
Spent Nuclear Fuel Stabilized (m <sup>3</sup> )	0.032	0.132	0.000	n/a
Spent Nuclear Fuel Made Disposition-Ready (MTHM)	0.091	0.000	0.005	n/a
Spent Nuclear Fuel Made Disposition-Ready (m <sup>3</sup> )	0.056	0.031	0.016	n/a
Spent Nuclear Fuel In Disposition-Ready Storage (MTHM)	0.000	0.151	0.177	n/a
Spent Nuclear Fuel In Disposition-Ready Storage (m <sup>3</sup> )	0.000	0.256	0.605	n/a
Rocky Flats				
Number of Completed Release Site Assessments	18	13	15	n/a
Number of Release Site Completions	2	2	2	175
Number of Completed Facility Decommissioning Assessments	34	92	2	n/a
Number of Facilities Decommissioned	12	9	33	727
Number of Facilities Deactivated	2	8	0	290
Volume of Transuranic Waste Treated (m <sup>3</sup> )	0	0	0	804
Volume of Transuranic Waste Stored (m <sup>3</sup> )	1,849	4,209	4,214	n/a
Volume of Transuranic Waste Shipped to DOE Disposal Site (m <sup>3</sup> ) <sup>a</sup>	35	670	2,000	9,531

<sup>a</sup> FY 1999 and FY 2000 reflect disposal-ready volumes and shipments to the Waste Isolation Pilot Plant. FY 1998 reflects disposal-ready volumes only.

	FY 1998 Actual	FY 1999 Planned	FY 2000 Planned	Life-cycle
Volume of Mixed Low-Level Waste Treated (m <sup>3</sup> )	4,126	4,886	6,575	35,437
Volume of Mixed Low-Level Waste Stored (m <sup>3</sup> )	8,114	7,999	3,873	n/a
Volume of Mixed Low-Level Waste Disposed On-site or Commercially (m <sup>3</sup> )	6,527	2,886	6,575	78,874
Volume of Mixed Low-Level Waste Shipped to DOE Disposal Site (m <sup>3</sup> )	0	0	0	165
Volume of Low-Level Waste Treated (m <sup>3</sup> )	0	0	0	40
Volume of Low-Level Waste Stored (m <sup>3</sup> )	9,576	8,614	11,178	n/a
Volume of Low-Level Waste Shipped to DOE Disposal Site (m <sup>3</sup> )	2,669	2,630	2,050	65,028
Nuclear Material Stabilized - Pu Solution (l)	3,035	0	0	TBD
Nuclear Material Stabilized - Pu Residue (kg bulk)	5,004	32,662	36,480	99,742
Nuclear Material Made Disposition-Ready - Pu Metal/Oxides/Other (Containers)	0	0	910	1,800
Richland				
Number of Completed Release Site Assessments	276	46	417	n/a
Number of Release Site Completions	9	32	16	1,699
Number of Facilities Decommissioned	46	38	23	1,306
Number of Facilities Deactivated	29	50	36	971
Volume of High-Level Waste Treated (m <sup>3</sup> )	0	0	0	194,183
Volume of High-Level Waste Stored (m <sup>3</sup> )	204,000	207,000	221,000	n/a
Volume of Transuranic Waste Treated (m <sup>3</sup> )	0	182	390	20,712
Volume of Transuranic Waste Stored (m <sup>3</sup> )	16,300	16,300	16,400	n/a
Volume of Transuranic Waste Shipped to DOE Disposal Site (m <sup>3</sup> ) <sup>a</sup>	0	22	131	18,749
Volume of Mixed Low-Level Waste Treated (m <sup>3</sup> )	22	608	500	40,329
Volume of Mixed Low-Level Waste Stored (m <sup>3</sup> )	9,171	10,000	8,815	n/a
Volume of Mixed Low-Level Waste Disposed On-site or Commercially (m <sup>3</sup> )	0	0	2,525	99,084
Volume of Low-Level Waste Treated (m <sup>3</sup> )	12	0	0	41,656
Volume of Low-Level Waste Stored (m <sup>3</sup> )	180	180	180	n/a
Volume of Low-Level Waste Disposed On-site or Commercially (m <sup>3</sup> )	5,920	6,120	3,880	471,796
Nuclear Material Stabilized - Pu Solution (l)	0	40	160	4,300
Nuclear Material Stabilized - Pu Residue (kg bulk)	0	0	600	3,550
Nuclear Material Stabilized - Pu Metal/Oxides (containers)	0	238	238	3,140
Nuclear Material Stabilized - U in Other Forms (kg bulk)	0	78	9	96
Nuclear Material Made Disposition-Ready On-site - U in Other Forms (kg bulk)	0	0	0	1,860,000
Spent Nuclear Fuel Stabilized (MTHM)	0.230	0.000	0.000	2,130.000
Spent Nuclear Fuel Stabilized (m <sup>3</sup> )	0.300	0.000	0.000	n/a
Spent Nuclear Fuel In Disposition-Ready Storage (MTHM)	0.000	0.000	0.020	28.600
Spent Nuclear Fuel In Disposition-Ready Storage (m <sup>3</sup> )	0.000	0.000	0.070	28.900
Savannah River				
Number of Completed Release Site Assessments	63	28	25	n/a
Number of Release Site Completions	60	13	6	370
Number of Facilities Decommissioned	0	0	0	2

<sup>a</sup> FY 1999 and FY 2000 reflect disposal-ready volumes and shipments to the Waste Isolation Pilot Plant. FY 1998 reflects disposal-ready volumes only.

	FY 1998 Actual	FY 1999 Planned	FY 2000 Planned	Life-cycle
Number of Facilities Deactivated	0	0	0	310
Volume of High-Level Waste Treated (m <sup>3</sup> )	871	696	348	757,860
Volume of High-Level Waste Stored (m <sup>3</sup> )	128,513	126,501	125,917	n/a
Number of High-Level Waste Canisters Produced	250	200	100	5,084
Volume of Transuranic Waste Treated (m <sup>3</sup> )	0	0	0	23,417
Volume of Transuranic Waste Stored (m <sup>3</sup> )	10,837	11,527	11,616	n/a
Volume of Transuranic Waste Shipped to DOE Disposal Site (m <sup>3</sup> ) <sup>a</sup>	0	44	35	16,710
Volume of Mixed Low-Level Waste Treated (m <sup>3</sup> )	3,183	1,073	795	14,036
Volume of Mixed Low-Level Waste Stored (m <sup>3</sup> )	2,121	2,276	1,160	n/a
Volume of Mixed Low-Level Waste Disposed On-site or Commercially (m <sup>3</sup> )	0	0	50	6,672
Volume of Mixed Low-Level Waste Shipped to DOE Disposal Site (m <sup>3</sup> )	0	0	0	18
Volume of Low-Level Waste Treated (m <sup>3</sup> )	7,400	11,417	3,795	353,429
Volume of Low-Level Waste Stored (m <sup>3</sup> )	18,040	14,854	14,525	n/a
Volume of Low-Level Waste Disposed On-site or Commercially (m <sup>3</sup> )	4,423	9,576	3,235	803,185
Nuclear Material Stabilized - Pu Solution (l)	0	0	0	34,000
Nuclear Material Stabilized - Pu Residue (kg bulk)	0	225	1,390	4,296
Nuclear Material Stabilized - Pu Metal/Oxides (Containers)	80	94	0	1,124
Nuclear Material Stabilized - Other NM in Solution Form (l)	0	0	0	33,700
Nuclear Material Stabilized - Other NM Forms (Handling Units)	147	459	432	18,859
Nuclear Material Made Disposition-Ready On-site - U Solution (l)	0	0	85,608	2,450,604
Spent Nuclear Fuel Made Disposition-Ready (m <sup>3</sup> )	11.972	16.251	0.000	n/a

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<sup>a</sup> FY 1999 and FY 2000 reflect disposal-ready volumes and shipments to the Waste Isolation Pilot Plant. FY 1998 reflects disposal-ready volumes only.

**Fiscal Year 1998**  
**Corporate Performance Measures**  
**EM Program Totals (Planned vs. Actual) <sup>a</sup>**

(performance measures)				
	FY 1998 Planned	FY 1998 Actual	Variance	% Variance
Number of Completed Release Site Assessments . . . . .	575	583	8	1%
Number of Release Site Completions . . . . .	281	290	9	3%
Number of Completed Facility Decommissioning Assessments . . . . .	90	89	-1	-1%
Number of Facilities Decommissioned . . . . .	71	108	37	52%
Number of Facilities Deactivated . . . . .	63	70	7	11%
Volume of High-Level Waste Treated (m <sup>3</sup> ) . . . . .	4,194	2,411	-1,783	-43%
Volume of High-Level Waste Stored (m <sup>3</sup> ) . . . . .	361,213	342,062	-19,151	-5%
Number of High-Level Waste Canisters Produced . . . . .	288	331	43	15%
Volume of Transuranic Waste Treated (m <sup>3</sup> ) . . . . .	255	90	-165	-65%
Volume of Transuranic Waste Stored (m <sup>3</sup> ) . . . . .	108,211	107,339	-872	-1%
Volume of Transuranic Disposed at a DOE Site (m <sup>3</sup> ) . . . . .	388 to 592	0	-388 to -592	-100%
Volume of Mixed Low-Level Waste Treated (m <sup>3</sup> ) . . . . .	6,611	11,048	4,437	67%
Volume of Mixed Low-Level Waste Stored (m <sup>3</sup> ) . . . . .	49,335	61,128	11,793	24%
Volume of Mixed Low-Level Waste Disposed On-site or Commercially (m <sup>3</sup> )	8,194	10,727	2,533	31%
Volume of Low-Level Waste Treated (m <sup>3</sup> ) . . . . .	22,117	15,375	-6,742	-30%
Volume of Low-Level Waste Stored (m <sup>3</sup> ) . . . . .	117,262	242,675	125,413	107%
Volume of Low-Level Waste Disposed On-site or Commercially (m <sup>3</sup> )	52,468	29,762	-22,706	-43%
Nuclear Material Stabilized at Richland - Pu (kg) . . . . .	946	N/A	N/A	N/A
Nuclear Material Stabilized at RFETS - Pu Solution (liters) . . . . .	7,735	3,035	-4,700	-61%
Special Nuclear Material Shipments at RFETS - (# of shipments) . . .	60	38	-22	-37%
Nuclear Material Stabilized at RFETS (Pu Residue kg bulk) . . . . .	19,550	5,004	-14,546	-74%
Spent Nuclear Fuel Stabilized (MTHM) . . . . .	3.680	0.753	-2.927	-80%
Number of Technology Deployments . . . . .	49	122	73	149%

<sup>a</sup> See the following pages for explanation of variances on this chart which exceed +/-15 percent.



## **FY 1998 EM Corporate Performance Measure Variance Explanations**

Listed below are explanations for variances between the FY 1998 planned and actual results for EM's Corporate Performance Measures that meet or exceed a +/- 15 percent threshold. The FY 1998 "planned" data are consistent with performance measures data reported in the FY 1999 Congressional Budget Request.

### **Facilities**

#### **# Number of Facilities Decommissioned**

The +37 in the number of facilities decommissioned is primarily a result of the addition of facilities that were not accounted for in the original facility inventory at the beginning of FY 1998.

### **Waste Treatment, Storage, and Disposal**

#### **# Volume of High-Level Waste Treated**

The -1,783 m<sup>3</sup> high-level waste treatment variance is primarily the result of an overstatement of the original target at one operations/field office due to the multiple counting of high-level waste treatment volumes as they transfer between projects. The year-end actual high-level waste treatment volumes reflect the appropriate counting methodology.

#### **# Number of High-Level Waste Canisters Produced**

A total of 43 additional high-level waste canisters were produced in FY 1998. Savannah River produced fifty more canisters than the 200 planned due to process improvements and operational efficiencies. West Valley produced 81 canisters of high-level waste. While West Valley's canister count goal of 88 was not reached, the canisters were filled to a higher level thus producing only 81 canisters. (The increase in fill percentage was a significant waste minimization achievement).

#### **# Volume of Transuranic Waste Treated**

The -165 m<sup>3</sup> transuranic waste treatment variance is primarily the result of activities that were put on hold pending the opening of the Waste Isolation Pilot Plant.

#### **# Volume of Transuranic Waste Disposed**

The -388 to -592 m<sup>3</sup> transuranic waste disposal variance is the result of delays in disposal activities pending resolution of legal challenges to the opening of the Waste Isolation Pilot Plant.

#### **# Volume of Mixed Low-Level Waste Treated**

The 4,437 m<sup>3</sup> increase in mixed low-level waste treatment is primarily due to: (1) a change in Savannah River Operations Office's use of the Consolidated Incinerator Facility campaign during FY 1998 from low-level waste to mixed low-level waste; (2) the addition of mixed low-level waste

volumes from Paducah and Portsmouth that had not previously been counted (as a result of changes to the definition); and (3) the use of funds redirected from projects with cost underruns.

**# Volume of Mixed Low-Level Waste Stored**

The 11,793 increase in mixed low-level waste inventory is primarily due to the addition of waste volumes from Paducah and Portsmouth that had not previously been counted in the original target (as a result of changes to the definition to include all EM waste except remediation waste).

**# Volume of Mixed Low-Level Waste Disposed**

The 2,533 m<sup>3</sup> increase in mixed low-level waste disposed is primarily the result of : (1) accelerated shipments of pondcrete at Rocky Flats; (2) the addition of mixed low-level waste volumes from Paducah and Portsmouth that had not previously been counted (as a result of changes to the definition); and (3) the use of funds redirected from projects with cost underruns.

**# Volume of Low-Level Waste Treated**

The -6,742 m<sup>3</sup> low-level waste treatment variance is primarily the result of delays in the start of the Waste Sort Facility at Savannah River and the fact that no low-level waste was burned in the Consolidated Incinerator Facility.

**# Volume of Low-Level Waste Stored**

The 125,413 m<sup>3</sup> increase in the volume of low-level waste inventory is largely the result of the addition of low-level waste volumes from Paducah and Portsmouth that had not been previously counted (as a result of changes to the definition for low-level waste to include all EM waste except remediation waste). Also contributing to the increase were: lawsuits that temporarily restricted low-level waste disposal; delays in the Waste Management Programmatic Environmental Impact Statement Records of Decision; and the temporary suspension of low-level waste shipments from Fernald to Nevada.

**# Volume of Low-Level Waste Disposed**

The -22,706 m<sup>3</sup> low-level waste disposal variance is primarily due to: (1) delays in the startup of Savannah River's Waste Sort Facility and the Super Compactor which limited the ability to treat and dispose of waste; (2) less low-level waste was generated than originally anticipated at Albuquerque; and (3) the temporary suspension of low-level waste shipments from Fernald to Nevada. In addition, the original target was overstated by approximately 10,000 cubic meters as a result of counting remediation waste in the volumes initially reported.

## **Nuclear Material and Spent Nuclear Fuel Stabilization**

The nuclear material performance measure subcategories were revised during FY 1998 to resolve classified data reporting issues. These revised performance measures are included in the EM Corporate Performance Measures table.

**# Nuclear Material Stabilized at Richland -- Plutonium (Pu) (kg)**

This measure was revised during FY 1998 to avoid classified data reporting issues at some of EM's other sites. The FY 1998 "actual" is therefore "N/A".

**# Nuclear Material Stabilized at Rocky Flats -- Pu Solution (liters)**

The -4,700 liter Pu solution variance at Rocky Flats is primarily a result of the termination of draining operations in Building 771 earlier in the year due to unexpected safety issues. While the desired commitment for draining of the Pu liquid systems was not achieved, some additional work scope, involving the strip out of piping, was accelerated and accomplished in FY 1998. The safety problems in Building 771 have been resolved and draining is expected to be completed in December 2001 along with the acceleration of the pipe removal activities.

**# Special Nuclear Material Shipments at Rocky Flats -- (# of shipments).**

Rocky Flats completed a total of 38 special nuclear material shipments, including 30 shipments of former war reserve pits to the Pantex Plant, 5 shipments of highly-enriched uranium to the Y-12 Plant, and 3 pit shipments to the Los Alamos National Laboratory. Due to delayed funding at both receiver sites and a technical issue associated with highly-enriched uranium shipping, Rocky Flats was not able to complete all 60 planned special nuclear material shipments. The shipping of former war reserve pits to Pantex has resumed and the remaining shipments will be completed in FY 1999. The shipping of highly-enriched uranium to Y-12 resumed in September 1998. However, the technical issue associated with the highly-enriched uranium shipping is not totally resolved. Alternatives to resolve this technical issue are currently under development in conjunction with Defense Programs.

**# Nuclear Material Stabilized at Rocky Flats -- Pu Residue (kg bulk)**

The -14,546 kg bulk plutonium residue variance is primarily due to safety issues and construction delays at Rocky Flats. Recovery plans have been implemented for the Solid Residue Project. Six new processing lines have been operational within the last several months and the recovery plan is projected to recoup most of the FY 1998 shortfall in FY 1999.

**# Spent Nuclear Fuel Stabilized**

The -2.927 metric tons of heavy metal of spent nuclear fuel stabilized variance is due to schedule delays at the Idaho National Engineering and Environmental Laboratory as a result of the: (1) bankruptcy of VECTRA, a sub-tier contractor under Newport News Shipbuilding, that caused a delay in the design and fabrication of the Heated Vacuum Drying System. The spent fuel drying campaign, which relies on this equipment, impacted 55% of the spent fuel scheduled to be stabilized in FY 1998. Nevertheless, the commitment to the State of Idaho to complete the spent nuclear fuel storage facility by December 1998, has been met as specified in the Idaho Settlement Agreement, and (2) safety analysis issues have been resolved, and fuel stabilization activities at the canning station and the repair of the equipment and cranes necessary to relocate vulnerable spent fuel into new generation dry storage wells have resumed.

## **Science and Technology**

**# Technology Deployments**

Significantly higher numbers of innovative technology deployments were achieved than originally planned due to implementation of the Congressionally-supported Technology Deployment Initiative, adoption of a deployment orientation as part of the Focus Area-centered program

approach for technology development, and improved coordination of Science and Technology activities with EM line program needs/opportunities as part of the EM Integration activity and the EM *Accelerating Cleanup: Paths to Closure* process. In addition, because “technology deployment” is a relatively new EM Corporate Performance Measure, the initial FY 1998 deployment targets were somewhat conservative.

# Environmental Management FY 2000 Budget Request Funding Distribution by Project Baseline Summary

(dollars in thousands)

			Costs	(Dollars in thousands)					
Ops Office/ Installation	Project Number	Project Name	EM Baseline	Prior	FY 1998	FY 1999	FY 2000	Unappropri-	Planned
			(current \$) <sup>a</sup> 1997-2070	Year (FY 1997)	Current Approp	Current Approp	Request	ated Balance	
Albuquerque									
AL Ops	AL002	AL Miscellaneous Programs	33,396	10,978	16,245	7,100	4,600	See below <sup>b</sup>	TBD
AL Ops	---	AL Accounting Adjustments	---	13,321	---	---	---	---	---
AL Ops	AL003	South Valley Superfund Site	8,508	163	0	0	0	8,345	9/30/03
AL Ops	AL004	New Mexico Agreement in Principle	100,335	0	1,650	980	950	96,755	TBD
Lovelace	AL005	Lovelace Biomedical and Environmental Research Institute	34,064	919	789	478	481	31,397	9/01/70
KCP	AL007	Environmental Restoration	236,638	3,832	3,513	1,756	1,100	226,437	TBD
LANL	AL008	Nuclear Material Facility Stabilization R&D	145,174	13,888	14,100	12,920	12,900	91,366	TBD
LANL	AL009	LANL Environmental Restoration	1,074,562	48,778	60,830	42,387	68,100	854,467	9/01/08
LANL	AL012	LANL Waste Management - Newly Generated Waste	55,279 <sup>c</sup>	28,676	26,603	0	0	n/a	n/a
LANL	AL013	LANL Waste Management - Legacy Waste	736,783	24,295	27,333	17,126	21,000	647,029	TBD
Pantex	AL014	Pantex Plant Site Remediation Project	92,514	8,761	11,161	11,299	15,000	46,293	9/01/15
Pantex	AL015	Pantex Waste Operations	23,006 <sup>c</sup>	10,924	12,082	0	0	n/a	n/a
SNL	AL017	Sandia National Laboratories (SNL) Waste Management	35,011 <sup>c</sup>	15,103	19,908	0	0	n/a	n/a
SNL	AL018	Sandia ER Project	108,311	18,463	28,460	27,260	19,435	14,693	9/30/31
Pinellas	AL019	Pinellas Plant Close-out & Administration of Post-Employment Benefits	404,766	52,861	-451	501	3,000	348,855	9/01/97

<sup>a</sup> Costs reflected here are in 'then year' dollars (also referred to as 'current year' dollars) in order to be comparable to budget authority. The costs reflected in the *Accelerating Cleanup: Paths to Closure* document are reflected in 'constant 1998' dollars.

<sup>b</sup> EM is refining the life-cycle cost estimate for this project based upon the current and historic levels of appropriations and the resulting unappropriated balance.

<sup>c</sup> This cost estimate has been adjusted to reflect the transfer of responsibility for newly-generated waste to the generator program in FY 1999.

(dollars in thousands)

Ops Office/ Installation	Project Number	Project Name	Costs	Budget Authority					Planned Compl. Date
			EM Baseline (current \$) <sup>a</sup> 1997-2070	Prior Year (FY 1997)	FY 1998 Current Approp	FY 1999 Current Approp	FY 2000 Request	Unappropriated Balance	
UMTRA	AL020	UMTRA - Surface Remedial Action Project	133,459	41,074	35,936	20,782	0	35,667	9/30/99
GJPO	AL021	Maxey Flats Field Management Project	12,846	8,000	8,000	1,200	1,200	See below <sup>a</sup>	9/01/02
GJPO	AL022	Monticello Projects	132,873	16,204	25,558	34,250	22,000	34,861	9/01/01
UMTRA	AL023	UMTRA Ground Water	189,369	7,132	5,559	5,902	13,000	157,776	9/01/11
GJPO	AL024	GJO All Other Projects	4,006,263	16,831	14,015	7,163	8,500	3,959,754	9/30/70
Pinellas	AL025	Groundwater clean-up (PinellasPlant)	41,217	9,193	2,769	2,296	2,500	24,459	9/30/14
KCP	n/a	KCP activities <sup>b</sup>	----	7,882	0	0	0	n/a	n/a
LANL	AL-RSRP/LANL	Radioactive Source Recovery Program	98,794	0	975	1,611	6,000	90,208	9/1/10
LANL	AL026	Plutonium/Beryllium Sources <sup>c</sup>	TBD	0	0	1,738	1,834	TBD	TBD
LANL	AL027	Nuclear Criticality <sup>d</sup>	n/a	0	225	0	0	n/a	n/a
LANL	AL028	Nuclear Materials Stewardship Project Office	TBD	0	1,474	792	1,000	TBD	TBD
LANL	AL029	TA-21 Cleanup	TBD	0	0	5,000	0	TBD	TBD
Subtotal, Albuquerque				357,278	316,734	202,541	202,600		
<b>Carlsbad</b>									
WIPP	CAO-1	WIPP Base Operations	8,356,228	100,637	101,979	106,621	111,698	7,935,293	9/1/39
WIPP	CAO-2	WIPP Disposal Phase Certification and Experimental Program	1,869,855	46,113	39,862	37,387	35,295	1,711,198	9/1/39
WIPP	CAO-3	WIPP Transportation	1,574,057	14,196	9,186	17,494	19,222	1,513,959	9/1/33
WIPP	CAO-4	WIPP TRU Waste Sites Integration and Preparation	2,641,488	26,894	22,673	23,902	20,189	2,547,830	9/1/39
Subtotal, Carlsbad				187,840	173,700	185,404	186,404		
<b>Chicago</b>									
CH Ops	CH-COPS	CH Operations Program Support (Non-Def)	4,221	675	41	597	0	2,908	9/1/06

<sup>a</sup> EM is refining the life-cycle cost estimate for this project based upon the current and historic levels of appropriations and the resulting unappropriated balance.

<sup>b</sup> This scope was transferred to Defense Programs prior to Project Baseline Summary development and is therefore not included in the Project Baseline Summaries.

<sup>c</sup> This scope was transferred from Defense Programs to EM in FY 1999; baseline information will be developed in the next update of the *Accelerating Cleanup: Paths to Closure* document.

<sup>d</sup> This activity is now managed from the Headquarters project number HQNP-NCST, Nuclear Criticality Safety Training.

(dollars in thousands)

Ops Office/ Installation	Project Number	Project Name	Costs	Budget Authority					Planned Compl. Date
			EM Baseline (current \$) <sup>a</sup> 1997-2070	Prior Year (FY 1997)	FY 1998 Current Approp	FY 1999 Current Approp	FY 2000 Request	Unappropri- ated Balance	
CH Ops	CH-COPS-D	CH Operations Program Support (Defense)	20	0	20	0	0	n/a	n/a
Ames	CH-AMESRA	Ames Remedial Actions	233	130	103	0	0	0	9/1/97
Ames	CH-AMESWO	AMES Waste Operations	785	207	260	306	260	See below <sup>a</sup>	9/1/99
ANL-E	CH-ANLEDD	ANL-E Decontamination & Decommissioning Actions	27,664	4,093	570	5,732	6,898	10,371	9/30/02
ANL-E	CH-ANLEDD-D	ANL-E Decontamination & Decommissioning Actions (Defense)	4,075	0	4,075	0	0	0	9/30/02
ANL-E	CH-ANLEPM	ANL-E Program Management (Non-Def)	4,067	2,073	657	572	763	See below <sup>a</sup>	9/30/02
ANL-E	CH-ANLEPM-D	ANL-E Program Management (Defense)	78	0	78	0	0	0	9/30/02
ANL-E	CH-ANLERA	ANL-E Remedial Actions (Non-Def)	21,498	4,000	3,290	3,644	4,500	6,064	9/1/02
ANL-E	CH-ANLERA-D	ANL-E Remedial Actions (Defense)	932	932	0	0	0	0	9/1/02
ANL-E	CH-ANLEWO	ANL-E Waste Operations	25,400	13,489	7,251	8,222	7,600	See below <sup>a</sup>	10/1/99
ANL-W	CH-ANLWRA	ANL-W Remedial Actions	6,893	1,825	2,030	1,142	809	See below <sup>b</sup>	12/1/99
ANL-W	CH-ANLWWO	ANL-W Waste Operations	6,700 <sup>c</sup>	4,840	1,600	0	0	0	9/1/97
BNL	CH-BRNLBYW	BNL Boneyard Waste	8,445	0	1,801	1,151	2,787	2,706	8/1/00
BNL	CH-BRNLDD	BRNL Decontamination and Decommissioning Actions	35,524	0	143	3,023	130	32,228	12/3/04
BNL	CH-BRNLPM	BNL Program Management	24,737	3,162	3,393	3,503	3,647	11,032	11/1/06
BNL	CH-BRNLRA	BNL Remedial Actions	141,147	17,396	15,263	14,906	14,901	78,681	9/1/06
BNL	CH-BRNLWO	BNL Waste Operations	17,250	5,850	5,537	7,418	8,088	See below <sup>a</sup>	9/30/99
BNL	--	Accounting Adjustment	---	2,000	---	---	---	---	---
CH Ops	CH-CHOOPUAB	Princeton Site A/B Payments	2,484	0	153	504	644	1,183	TBD
CH Ops	CH-CHOOSA	Site A Cleanup	341	341	0	0	0	0	3/1/97
CH Ops	CH-CHOOSM-D	Surveillance and Maintenance Activities (Def)	483 <sup>d</sup>	244	221	0	0	0	9/1/98

<sup>a</sup> EM is refining the life-cycle cost estimate (as well as schedule baseline) for this project based on change in assumptions for transfer of newly-generated waste to the generator program.

<sup>b</sup> EM is refining the life-cycle cost estimate for this project based upon the current and historic levels of appropriations and the resulting unappropriated balance.

<sup>c</sup> This includes \$260K of carryover from prior year appropriations that will be costed and is therefore included in the EM baseline cost but is not reflected in the budget authority amounts shown here.

<sup>d</sup> Includes \$18K of carryover from prior year appropriations that will be costed and is therefore in the EM baseline cost but is not reflected in the budget authority amounts shown here.

(dollars in thousands)

Ops Office/ Installation	Project Number	Project Name	Costs	Budget Authority					Planned Compl. Date
			EM Baseline (current \$) <sup>a</sup> 1997-2070	Prior Year (FY 1997)	FY 1998 Current Approp	FY 1999 Current Approp	FY 2000 Request	Unappropri- ated Balance	
Fermi	CH- FNALWO	FNAL Waste Operations	2,100	2,100	0	0	0	0	10/1/97
PPPL	CH-PPPLRA	PPPL Remedial Actions	1,527	500	424	351	273	See below <sup>a</sup>	TBD
PPPL	CH-PPPLWO	PPPL Waste Operations	9,003	3,199	2,866	2,992	2,800	See below <sup>b</sup>	9/1/99
Subtotal, Chicago				67,056	49,776	54,063	54,100		

**Idaho**

INEEL	ID-ER-101	Test Area North Remediation	110,720	5,308	9,200	4,107	10,458	81,647	9/30/26
INEEL	ID-ER-102	Test Reactor Area Remediation	41,940	1,168	1,647	2,893	1,660	34,572	9/30/38
INEEL	ID-ER-103	Idaho Chemical Processing Plant Remediation	768,524	2,268	2,995	11,404	13,815	738,042	10/1/46
INEEL	ID-ER-104	Central Facilities Area (CFA) Remediation	29,551	4,483	1,768	871	2,038	20,391	9/30/02
INEEL	ID-ER-105	Power Burst Facility/Aux Reactor Area	17,968	1,142	1,241	871	2,213	12,501	10/2/02
INEEL	ID-ER-106 <sup>c</sup>	Radioactive Waste Management Complex Remediation	1,896,330	4,221	39,053	23,700	7,013	1,822,343	9/1/24
INEEL	ID-ER-107	Pit 9 Remediation	135,432	51,827	0	2,941	2,379	78,285	9/30/01
INEEL	ID-ER-108	Sitewide Monitoring Area Remediation	77,785	5,522	3,386	3,529	6,144	59,204	9/30/08
INEEL	ID-ER-109	Remediation Operations	610,429	28,349	14,955	19,872	14,984	532,269	9/1/70
INEEL	ID-ER-110	Decontamination & Decommissioning	857,257	3,273	7,374	5,339	7,866	833,405	9/30/44
INEEL	ID-HLW-101	High-Level Waste Pretreatment	1,057,754	35,248	40,038	38,546	38,751	905,171	9/1/14
INEEL	ID-HLW-103	High-Level Waste Treatment and Storage	4,626,205	8,197	18,312	13,053	24,674	4,561,969	12/1/37
INEEL	ID-HLW-104	Vitrified HLW Storage	96,868	0	0	0	0	96,868	9/1/70
INEEL	ID-HLW-105	Low Activity Waste Treatment	242,293	0	0	2,108	5,712	234,473	TBD
INEEL	ID-LRP-101	Environmental Engineering & Science Center	TBD	0	8,000	61	0	TBD	TBD
INEEL	ID-LRP-101-PC	Environmental Engineering & Science Center (Site/Project Completion)	TBD	0	0	8,939	0	TBD	TBD
INEEL	ID-OIM-101	Site-Wide Landlord Operations	4,000,260	26,661	23,076	29,604	34,626	3,886,293	9/1/2095
INEEL	ID-OIM-102	ICPP Non-Process Plant Operations	3,976,294	53,418	51,240	60,165	51,283	3,760,188	9/1/70
INEEL	ID-OIM-103	INEEL Medical Facilities	263	263	0	0	0	0	35,673

<sup>a</sup> EM is refining the life-cycle cost estimate for this project based upon the current and historic levels of appropriations and the resulting unappropriated balance.

<sup>b</sup> EM is refining the life-cycle cost estimate (as well as schedule baseline) for this project based on change in assumptions for transfer of newly-generated waste to the generator program.

<sup>c</sup> The Idaho Program for FY 2000 also includes the use of \$43 million in prior year balances for Pit 9 activities, for a total project scope level of \$50,013,000.



(dollars in thousands)

Ops Office/ Installation	Project Number	Project Name	Costs	Budget Authority					Planned Compl. Date
			EM Baseline (current \$) <sup>a</sup> 1997-2070	Prior Year (FY 1997)	FY 1998 Current Approp	FY 1999 Current Approp	FY 2000 Request	Unapprop- riated Balance	
INEEL	ID-OIM-104	INEEL Emergency Response Facilities	748 <sup>a</sup>	747	0	0	0	0	2/1/99
INEEL	ID-OIM-105	Security Facilities Consolidation Project	6,818 <sup>b</sup>	4,959	864	840	0	0	5/1/99
INEEL	ID-OIM-106	Electrical & Utility Systems Upgrade (EUSU) Project, ICPP	57,828	11,726	17,541	13,584	12,879	2,098	12/1/02
INEEL	ID-OIM-107	INEEL Electrical Distribution Upgrade	9,967	6,862	3,105	0	0	0	9/1/99
INEEL	ID-OIM-108	INEEL Road Rehabilitation	11,400	0	600	8,079	2,716	5	6/1/01
INEEL	ID-OIM-109	Health Physics Instrument Laboratory	12,440	0	0	1,049	7,310	4,081	12/30/02
INEEL	ID-OIM-110	Pre-FY 2007 Surplus Facility Deactivation Project	118,430	10,304	7,250	6,503	7,288	87,085	9/30/06
INEEL	ID-OIM-110-N	Pre-FY 2007 Surplus Facility Deactivation Project (Non-Defense)	TBD	1,508	627	4,638	763	TBD	9/30/06
INEEL	ID-OIM-111	Post-FY 2006 Surplus Facilities Deactivation Projects	55,290	0	0	0	0	55,290	9/1/50
INEEL	ID-OIM-112	Pre-2007 INEEL Surveillance and Maintenance (S&M)	38,055	3,350	3,853	4,330	4,189	22,333	9/1/55
INEEL	ID-OIM-112-N	Pre-2007 INEEL Surveillance and Maintenance (S&M) (Non-Def)	TBD	1,642	1,492	1,303	1,600	TBD	9/1/55
INEEL	ID-OIM-113	Post-2006 Surveillance, Maintenance, & Monitoring	116,813	0	0	0	0	116,813	9/1/55
INEEL	ID-OIM-114	Sitewide INEEL Information Network (SIINET)	TBD	0	0	0	50	TBD	TBD
INEEL	ID-OIM-115	Site Operations Center (SOC)	TBD	0	0	0	1,306	TBD	TBD
INEEL	ID-OIM-116	Environmental Legacy Compliance (VOC)	TBD	0	0	0	9,077	TBD	TBD
INEEL	ID-SNF-101	National Spent Nuclear Fuel Program	268,683	19,844	21,952	26,092	14,275	186,520	9/15/15
INEEL	ID-SNF-102	Integrated SNF Program	493,507	20,388	20,683	9,159	7,689	435,588	12/1/34
INEEL	ID-SNF-103	Emptied SNF Facilities	993,225	18,753	29,524	37,920	30,601	876,427	TBD
INEEL	ID-SNF-104	Constructed New Facilities	25,352	10,183	0	0	0	15,169	9/1/01
INEEL	ID-SNF-104-N	Constructed New Facilities (Non-Def)	4,648	0	751	0	3,500	397	9/1/01
INEEL	ID-WM-101	INEEL LLW/MLLW/Other Waste Program	209,606	30,073	21,855	25,632	22,191	109,855	9/1/06
INEEL	ID-WM-102	National LLW Program	38,848	4,553	4,021	4,086	3,345	22,843	9/30/06

<sup>a</sup> This includes \$1K of carryover from prior year appropriations that will be costed and is therefore included in the EM baseline cost but is not reflected in the budget authority amounts shown here.

<sup>b</sup> This includes \$12K of carryover from prior year appropriations that will be costed and is therefore included in the EM baseline cost but is not reflected in the budget authority amounts shown here.

(dollars in thousands)

Ops Office/ Installation	Project Number	Project Name	Costs	Budget Authority					Planned Compl. Date
			EM Baseline (current \$) <sup>a</sup> 1997-2070	Prior Year (FY 1997)	FY 1998 Current Approp	FY 1999 Current Approp	FY 2000 Request	Unapprop- riated Balance	
INEEL	ID-WM-103	INEEL Transuranic Waste	301,255	24,300	36,398	33,764	36,323	170,470	9/30/06
INEEL	ID-WM-105	AMWTP Production Operations	439,514	2,800	3,212	8,610	527	424,365	12/1/18
INEEL	ID-WM-106	INEEL Site-Wide Environmental Protection	816,869	8,074	5,176	6,988	7,508	789,123	9/30/50
INEEL	ID-WM-107	Long-Term Treatment/Storage/Disposal Operations	2,114,150	0	0	0	0	2,114,150	9/30/50
INEEL	ID-WM-108	Integrated Waste Operations Program	122,237	8,598	13,259	14,159	12,161	74,060	9/30/06
INEEL	ID-WV-103	Spent Nuclear Fuel (West Valley)	n/a	0	610	0	0	n/a	n/a
INEEL	ID-CTREXC-101	LLW/MLLW Center of Excellence	18,655	0	498	395	0	17,762	TBD
INEEL	HQNP-SI01-LT-ID	Security Investigations	TBD	0	0	508	508	TBD	TBD
Subtotal, Idaho				420,012	415,556	435,642	409,422 <sup>a</sup>		

**Nevada**

NTS	NV202	Agreements in Principle/Grants	34,761	1,405	3,736	3,473	4,068	22,079	TBD
NTS	NV211	Soils	239,140	14,280	1,460	6,056	5,696	211,648	9/01/06
NTS	NV212	Underground Test Area (UGTA)	1,184,423	16,025	20,277	29,009	33,236	1,085,876	9/13/14
NTS	NV214	Industrial Sites	469,942	7,506	13,000	10,800	11,405	427,231	10/1/08
NV Ops	NV240	Off-sites	177,796	9,325	3,933	7,036	8,634	148,868	7/1/06
NTS	NV350	TRU/Mixed TRU	34,650	1,027	5,628	5,141	6,483	16,371	9/1/03
NTS	NV360	Mixed Low-Level Waste	6,512	0	677	744	388	4,703	9/1/07
NTS	NV370	Low-Level Waste	2,376,995	13,423	5,542	5,420	5,864	2,346,746	9/1/70
NTS	NV400	Program Integration	1,068,278	10,053	14,665	12,402	9,533	1,021,625	9/1/70
Subtotal, Nevada				73,044	68,918	80,081	85,307		

**Oakland**

LLNL	OAK-001	LLNL Main Site Remediation	203,976	10,988	12,299	11,475	10,500	158,714	9/30/06
ETEC	OAK-007	ETEC Remediation	139,461	16,376	9,743	8,352	10,248	94,742	9/30/06
ETEC	OAK-009	ETEC Landlord	84,800	0	4,000	5,578	3,650	71,572	9/30/02
LLNL	OAK-041	Accelerated Waste Treatment	12,330	2,000	1,253	1,315	2,000	5,762	9/1/02
LLNL	OK-002	LLNL Site 300 Remedial Action	155,759	12,692	9,255	9,843	11,800	112,169	9/30/06
LBNL	OK-003	LBNL Soils and Groundwater (Envir Restor)	77,272	3,154	2,833	3,500	3,500	64,285	9/30/03

<sup>a</sup> The Idaho Program for FY 2000 also includes the use of \$43 million in prior year balances for Pit 9 activities, for a total program level of \$452.422 million.

(dollars in thousands)

Ops Office/ Installation	Project Number	Project Name	Costs	Budget Authority					Planned Compl. Date
			EM Baseline (current \$) <sup>a</sup> 1997-2070	Prior Year (FY 1997)	FY 1998 Current Approp	FY 1999 Current Approp	FY 2000 Request	Unappropriated Balance	
LBNL	OK-004	LBNL Haz. Waste Handling Facil Closure (Envir Restor)	1,131 <sup>a</sup>	0	657	0	0	0	9/30/98
SLAC	OK-005	Stanford Linear Accelerator Center (Environ. Restor.)	5,183	995	1,006	1,000	1,400	782	9/7/00
LEHR	OK-010	LEHR Environmental Restoration	18,201	3,535	5,580	3,030	3,000	3,056	9/1/02
GTF	OK-011	Soil Remediation (GTF)	1,300 <sup>b</sup>	1,000	0	0	0	0	35,399
GA	OK-012	Hot Cell Facility D&D at General Atomics	11,380	3,600	4,280	2,030	1,100	370	8/1/00
GE	OK-013	General Electric D&D (Environ. Restoration)	22,629	0	0	313	500	21,816	9/1/05
LEHR	OK-014	LEHR Waste Management	4,391	472	1,222	1,359	863	475	9/1/01
LBNL	OK-015	LBNL Legacy Waste	8,708	399	0	1,228	1,498	5,583	9/30/03
LBNL	OK-016	LBNL Newly Generated Wastes	17,048	5,195	5,775	5,940	6,100	See below <sup>c</sup>	n/a
LLNL	OK-021	LLNL Base Program	64,513	22,015	19,778	21,434	21,891	See below <sup>d</sup>	TBD
LLNL	OK-026	LLNL General Plant Projects	1,240	500	375	395	1,700	See below <sup>d</sup>	TBD
LLNL	OK-027	LLNL Decontam. & Water Treatment Facil	29,328	9,500	11,250	4,752	2,000	1,826	7/1/02
OK Ops	OK-040	Program Management and State Grants	TBD	100	87	0	300	TBD	10/1/36
OK Ops	OK-040-D	Program Management and State Grants (Defense)	TBD	5,370	2,192	2,700	800	TBD	10/1/36
OK Ops	---	OAK Accounting Adjustment	---	2,279	---	---	---	---	---
ETEC	OK-042	ETEC Waste Management	42,752	2,208	3,882	2,564	3,500	30,598	9/6/06
SPRU	SP-SPRU	Separations Process Research Unit (SPRU)	242,737	0	0	0	500	242,237	9/1/14
Subtotal, Oakland				102,378	95,467	86,808	86,850		

**Oak Ridge**

FUSRAP	FUSRAP	Formerly Utilized Sites Remedial Action Proj	n/a	73,970	0	0	0	n/a	n/a
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<sup>a</sup> This includes \$474K of carryover from prior year appropriations that will be costed and is therefore included in the EM baseline cost but is not reflected in the budget authority amounts shown here.

<sup>b</sup> This includes \$300K of carryover from prior year appropriations that will be costed and is therefore included in the EM baseline cost but is not reflected in the budget authority amounts shown here.

<sup>c</sup> EM is refining the life-cycle cost estimate (as well as schedule baseline) for this project based on change in assumptions for transfer of newly-generated waste to the generator program.

<sup>d</sup> EM is refining the life-cycle cost estimate for this project based upon the current and historic levels of appropriations and the resulting unappropriated balance.

(dollars in thousands)

Ops Office/ Installation	Project Number	Project Name	Costs	Budget Authority					Planned Compl. Date
			EM Baseline (current \$) <sup>a</sup> 1997-2070	Prior Year (FY 1997)	FY 1998 Current Approp	FY 1999 Current Approp	FY 2000 Request	Unapprop- riated Balance	
ORR	OR-38109	Hazardous Waste Management	980,983	4,270	5,337	4,602	5,506	961,268	10/1/2096
ORR	OR-38110	Sanitary/Industrial Waste Management	1,401,571	6,976	5,681	4,799	7,026	1,377,089	10/1/2096
ORR	OR-38111	Mixed Low Level Waste Management	7,899,750	87,530	100,375	66,311	73,706	7,571,828	9/30/06
ORR	OR-38112	Low Level Waste Management	6,470,958	50,784	32,643	26,741	31,821	6,328,969	9/30/13
ORR	OR-38212	Low Level Waste Management (Non-Defense)	17,230	9,997	7,233	0	0	0	9/30/13
ORR	OR-38113	Transuranic Waste Management	336,273	15,294	12,746	17,824	13,766	276,643	9/30/06
ORR	OR-42101	Y-12 East Fork Poplar Creek Remedial Action	966,381	18,367	18,635	4,757	6,886	917,736	9/1/10
ORR	OR-42102	Y-12 Bear Creek Remedial Action	110,758	1,007	3,975	7,988	8,210	89,578	9/1/10
ORNL	OR-43101	ORNL Melton Valley Watershed D&D (Defense)	523,541	0	6,623	0	24,307	492,611	9/30/12
ORNL	OR-43201	ORNL Melton Valley Watershed D&D (Non- Defense)	53,751	5,221	15,096	33,434	0	0	9/30/12
ORNL	OR-43102	ORNL Melton Valley Watershed Remedial Action (Defense)	151,080	0	464	0	1,300	149,316	9/30/13
ORNL	OR-43202	ORNL Melton Valley Watershed Remedial Action (Non-Defense)	23,409	17,909	2,927	2,573	0	0	9/30/13
ORNL	OR-43103	ORNL Bethel Valley Remedial Action (Defense)	1,598,657	7,799	833	0	28,569	1,561,456	9/30/11
ORNL	OR-43203	ORNL Bethel Valley Remedial Action (Non- Def)	50,198	12,531	19,194	18,473	0	0	9/30/11
ORNL	OR-43104	ORNL Bethel Valley D&D (Defense)	209,580	0	0	0	3,629	205,951	9/30/10
ORNL	OR-43204	ORNL Bethel Valley D&D (Non-Def)	12,560	3,061	4,302	5,197	0	0	9/30/10
ORR	OR-44105	ETTP Landlord (Defense)	51,872	0	6,432	24,721	24,681	See below <sup>a</sup>	9/30/06
ORR	OR-44305	ETTP Landlord (D&D Fund)	TBD	21,896	5,226	29,627	16,455	TBD	9/30/06
ORR	OR-44301	ETTP Remedial Action	1,270,942	13,150	27,181	114	13,491	1,217,006	9/1/11
ORR	OR-44302	ETTP Process Equipment D&D	587,517	6,346	18,474	47,500	62,500	452,697	9/1/07
ORR	OR-44103	ETTP D&D (Defense)	342,765	910	1,513	2,686	7,380	330,276	9/1/09
ORR	OR-44303	ETTP D&D (Fund)	TBD	33,652	33,908	27,786	29,622	TBD	9/1/09
ORR	OR-44304	ETTP Facility Safety Upgrades	40,000	0	0	0	0	40,000	9/30/00
Paducah	OR-45301	Paducah Remedial Action	1,586,491	20,675	20,020	20,788	20,647	1,504,361	9/30/10
Paducah	OR-45302	Paducah Waste Management	276,097	16,783	19,562	15,195	16,853	207,704	9/30/06
Portsmouth	OR-46301	Portsmouth Remedial Action	1,493,977	22,477	18,978	12,370	20,023	1,420,129	9/1/01

<sup>a</sup> EM is refining the life-cycle cost estimate for this project based upon the current and historic levels of appropriations and the resulting appropriated balance.

(dollars in thousands)

Ops Office/ Installation	Project Number	Project Name	Costs	Budget Authority					Planned Compl. Date
			EM Baseline (current \$) <sup>a</sup> 1997-2070	Prior Year (FY 1997)	FY 1998 Current Approp	FY 1999 Current Approp	FY 2000 Request	Unapprop- riated Balance	
Portsmouth	OR-46302	Portsmouth Waste Management	305,256	23,379	24,075	22,749	17,477	217,576	9/1/05
WSSRAP	OR-47201	Weldon Spring Disposal Facility	275,701	37,734	49,786	51,200	51,500 <sup>a</sup>	85,481	8/31/02
WSSRAP	OR-47202	Weldon Spring Waste Treatment	71,380	25,955	16,900	12,300	500 <sup>a</sup>	15,725	9/30/01
WSSRAP	OR-47203	Weldon Spring Long-Term S&M	45,900	0	0	0	0	45,900	9/30/33
ORR	OR-48103	Offsite Remedial Action (Defense)	1,299,569	26,564	26,468	9,168	15,409	1,221,960	8/31/06
ORR	OR-48203	Offsite Remedial Action (Non-Def)	TBD	328	6,993	3,427	400	TBD	8/31/06
ORR	OR-48303	Offsite Remedial Action (D&D Fund)	TBD	0	19,670	9,921	8,030	TBD	8/31/06
OR Ops	OR-48104	Directed Support (Defense)	67,694	7,650	398	2,898	4,162	52,586	9/1/06
OR Ops	OR-48204	Directed Support (Non-Def)	TBD	6,583	1,523	1,100	1,105	TBD	9/1/06
OR Ops	OR-48304	Directed Support (D&D Fund)	TBD	28,535	3,106	4,150	5,100	TBD	9/1/06
ORR	OR-63101	Nuclear Material & Facility Stabilization (Defense)	55,915	2,379	2,702	3,600	7,640	39,594	9/1/03
ORR	OR-63201	Nuclear Material & Facility Stabilization (Non- Def)	TBD	12,242	8,279	6,901	2,297	TBD	9/1/03
OR Ops	HQNP-SI01-LT-OR	Security Investigations	TBD	0	0	661	563	TBD	TBD
Subtotal, Oak Ridge				621,954	547,258	501,561	530,561		

**Ohio**

Ashtabula	OH-AB-01	Remediation	68,254	10,152	9,757	10,393	10,643	27,309	9/1/18
Ashtabula	OH-AB-02	Project Management, Site Services, ES&H	29,187	5,923	4,880	5,012	4,762	8,610	9/30/02
Columbus	OH-CL-01	King Avenue Site Decontamination	18,134	12,035	5,615	1,219	1,500	See below <sup>b</sup>	9/1/98 <sup>b</sup>
Columbus	OH-CL-02	West Jefferson Site Decontamination (Non-Def)	53,487	0	457	5,750	5,134	42,146	9/1/05
Columbus	OH-CL-02-D	West Jefferson Site Decontamination (Defense)	TBD	0	2,773	2,000	6,000	TBD	9/1/05
Columbus	OH-CL-03	Project Management, Site Support & Maintenance (Non-Def)	29,576	1,000	1,677	1,563	659	24,677	9/1/05
Columbus	OH-CL-03-D	Project Management, Site Support & Maintenance (Defense)	TBD	1,765	2,045	1,593	2,841	TBD	9/1/05
Fernald	OH-FN-01	Facility Shutdown	297,133	43,348	44,744	29,211	25,125	154,705	9/30/98

<sup>a</sup> It is the intent of the Environmental Management Program to fund the Weldon Spring Site Remedial Action Project at a program level of \$63.5 million. The program will work to identify funding sources for this important activity.

<sup>b</sup> EM is refining the life-cycle cost estimate (and planned completion date) for this project.

(dollars in thousands)

Ops Office/ Installation	Project Number	Project Name	Costs	Budget Authority					Planned Compl. Date
			EM Baseline (current \$) <sup>a</sup> 1997-2070	Prior Year (FY 1997)	FY 1998 Current Approp	FY 1999 Current Approp	FY 2000 Request	Unapprop- riated Balance	
Fernald	OH-FN-02	Facility D&D	194,843	9,192	9,206	13,794	17,689	144,962	5/30/05
Fernald	OH-FN-03	On-Site Disposal Facility	209,820	20,763	15,113	16,264	19,438	138,242	9/1/06
Fernald	OH-FN-04	Aquifer Restoration	269,642	30,683	22,811	24,974	24,296	166,878	9/1/08
Fernald	OH-FN-05	Waste Pits Remediation Project	405,267	13,308	44,056	46,147	48,840	252,916	5/1/05
Fernald	OH-FN-06	Soils	203,481	12,766	12,760	19,532	15,654	142,769	4/1/06
Fernald	OH-FN-07	Silos	466,911	17,761	22,654	17,545	33,922	375,029	9/30/08
Fernald	OH-FN-08	Nuclear Materials	5,935	0	3,800	3,167	2,121	See below <sup>b</sup>	9/1/99
Fernald	OH-FN-09	Thorium Overpack	1,650 <sup>a</sup>	1,582	0	0	0	0	7/1/97
Fernald	OH-FN-10	Mixed Waste	21,961	6,469	9,020	5,279	5,786	See below <sup>b</sup>	9/1/99
Fernald	OH-FN-11	Waste Management	96,136	21,717	15,333	19,489	14,910	24,687	9/1/00
Fernald	OH-FN-12	Program Support & Oversight	800,098	81,086	59,203	78,600	72,808	508,401	9/30/08
Miamisburg	OH-MB-01	Tritium Operations Transition	19,753	16,495	16,040	0	0	See below <sup>c</sup>	9/30/98
Miamisburg	OH-MB-02	Main Hill Tritium	57,769	0	12,157	33,413	35,266	See below <sup>c</sup>	4/1/01
Miamisburg	OH-MB-02-N	Main Hill Tritium (Non-Def)	TBD	97	992	1,003	1,000	TBD	4/1/01
Miamisburg	OH-MB-03	Legacy Waste	17,110	6,418	7,345	14,434	7,199	See below <sup>c</sup>	9/1/01
Miamisburg	OH-MB-04	Main Hill Rad	21,722	1,891	3,156	3,357	4,006	See below <sup>c</sup>	10/1/01
Miamisburg	OH-MB-05	Main Hill Non-Rad	9,509	373	4,105	2,776	2,768	See below <sup>c</sup>	11/1/02
Miamisburg	OH-MB-06	SM/PP Hill	22,981	3,997	5,026	2,526	6,617	See below <sup>c</sup>	9/1/02
Miamisburg	OH-MB-07	Test Fire Valley	29,794	1,400	4,329	4,513	7,157	See below <sup>c</sup>	12/2/02
Miamisburg	OH-MB-08	Soils	47,126	14,414	13,046	6,928	3,097	See below <sup>c</sup>	9/29/02
Miamisburg	OH-MB-09	Facility Operations and Maintenance	67,890	8,768	19,057	19,191	19,038	See below <sup>c</sup>	1/1/03
Miamisburg	OH-MB-10	Regulatory Oversight & Site Support	573,700	35,059	1,369	808	7,205	See below <sup>c</sup>	9/1/05
WVDP	OH-WV-01	HLW Vitrification and Tank Heel High Activity Waste Processing	306,000	54,000	53,000	43,800	43,100	112,100	9/30/02
WVDP	OH-WV-02	Site Transition, Decommissioning, & Project Completion	544,002	20,482	17,185	30,753	29,553	446,029	9/30/05
WVDP	OH-WV-03	Spent Nuclear Fuel	22,059	768	1,561	2,800	4,900	12,030	9/30/05

<sup>a</sup> This includes \$68K of carryover from prior year appropriations that will be costed and is therefore included in the EM baseline cost but is not reflected in the budget authority amounts shown here.

<sup>b</sup> EM is refining the life-cycle cost estimate for this project based upon the current and historic levels of appropriations and the resulting unappropriated balance.

<sup>c</sup> EM is revising the life-cycle cost estimate for this project based upon changes in assumptions for funding the Regulatory Oversight and Site Support project (OH-MB-10).

(dollars in thousands)

Ops Office/ Installation	Project Number	Project Name	Costs	Budget Authority					Planned Compl. Date
			EM Baseline (current \$) <sup>a</sup> 1997-2070	Prior Year (FY 1997)	FY 1998 Current Approp	FY 1999 Current Approp	FY 2000 Request	Unappropriated Balance	
WVDP	OH-WV-04	Project Management/Site Support	338,000	43,111	42,000	30,000	29,800	193,089	9/30/05
OH Ops	HQNP-SI01-CL-OH	Security Investigations (Ohio)	TBD	0	0	94	94	TBD	TBD
Subtotal, Ohio				496,823	486,272	497,928	512,928		

**Richland**

Hanford	RL-ER01	100 Area Remedial Action	638,592	16,095	12,074	22,054	26,111	562,258	9/30/11
Hanford	RL-ER02	200 Area Remedial Action	2,860,382	1,671	1,279	1,967	0	2,855,465	9/30/26
Hanford	RL-ER03	300 Area Remedial Action	209,665	6,519	6,819	7,809	6,296	182,222	9/30/13
Hanford	RL-ER04	Environmental Restoration Disposal Facility	735,504	14,841	21,383	29,952	16,030	653,298	9/30/44
Hanford	RL-ER05	Facility Surveillance & Maintenance	684,788	9,775	10,742	13,844	12,278	638,149	9/30/43
Hanford	RL-ER06	Decontamination and Decommissioning	3,710,138	12,475	17,675	11,540	10,769	3,657,679	9/30/30
Hanford	RL-ER07	Post Closure Surveillance & Maintenance	133,698	198	-10	59	60	133,391	9/30/43
Hanford	RL-ER08	Groundwater Management	832,937	14,770	20,603	19,152	19,394	759,018	10/30/43
Hanford	RL-ER09	N Reactor Deactivation	27,657 <sup>a</sup>	13,515	15,772	0	0	0	4/1/98
Hanford	RL-ER10	Program Management and Support	2,728,183	44,290	31,302	32,923	32,837	2,586,831	9/30/44
Hanford	RL-HM01	HAMMER	439,070	13,150	4,883	5,800	5,900	409,337	9/30/46
Hanford	RL-OT01	MISSION SUPPORT	2,943,945	28,270	22,857	26,180	25,866	2,840,772	9/30/46
RL Ops	RL-OT04	RL Directed Support	1,244,374	23,562	25,595	24,641	16,400	1,154,176	9/30/46
RL Ops	RL-RG01	TWRS Regulatory Unit	37,725	0	4,090	5,039	5,663	22,933	9/30/06
RL Ops	RL-ST01	PNNL WASTE MANAGEMENT	1,582,979	12,012	14,851	15,020	13,961	1,527,135	9/30/46
Hanford	RL-TP01	B-Plant Sub-Project	51,108	24,107	20,460	2,716	0	3,825	9/30/99
Hanford	RL-TP02	WESF Sub-Project	271,402	12,610	13,263	10,900	14,700	219,929	9/30/19
Hanford	RL-TP03	PUREX Sub-Project	21,999 <sup>b</sup>	16,088	-67	0	0	0	7/31/98
Hanford	RL-TP04	300 Area/SNM Sub-Project	20,647	1,591	3,677	4,444	3,658	7,277	9/29/00
Hanford	RL-TP05	PFP Deactivation	TBD	69,330	57,724	104,136	136,197	TBD	5/6/14
Hanford	RL-TP08	324/327 Facility Transition Project	181,261	6,720	21,068	31,547	27,908	94,018	3/9/05
Hanford	RL-TP08-N	324/327 Facility Transition Project (Non-Def)	21,912	8,712	13,200	0	0	0	3/9/05
Hanford	RL-TP09	K Basin Deactivation	133,513	0	0	0	0	133,513	10/2/07

<sup>a</sup> This includes \$7,242K of carryover from prior year appropriations that will be costed and is therefore included in the EM baseline cost but is not reflected in the budget authority amounts shown here.

<sup>b</sup> This includes \$5,354K of carryover from prior year appropriations that will be costed and is therefore included in the EM baseline cost but is not reflected in the budget authority amounts shown here.

(dollars in thousands)

Ops Office/ Installation	Project Number	Project Name	Costs	Budget Authority					Planned Compl. Date
			EM Baseline (current \$) <sup>a</sup> 1997-2070	Prior Year (FY 1997)	FY 1998 Current Approp	FY 1999 Current Approp	FY 2000 Request	Unapprop- riated Balance	
Hanford	RL-TP10	Accelerated Deactivation	572,057	0	2,114	1,738	1,741	566,464	9/30/37
Hanford	RL-TP11	Advanced Reactors Transition	69,037	10,940	5,853	1,863	1,418	48,963	3/31/02
Hanford	RL-TP12	Transition Project Management	313,468	8,669	10,776	15,148	15,191	263,684	9/30/37
Hanford	RL-TP13	Landlord Project	687,132	12,294	13,123	12,599	14,000	635,116	9/30/46
Hanford	RL-TP14	Hanford Surplus Facility Prog 300 Area Revitalization Project	126,648	0	735	508	646	124,759	12/31/07
Hanford	RL-TW01	Tank Waste Characterization	216,865	57,525	40,987	36,800	26,097	55,456	9/30/01
Hanford	RL-TW02	Tank Safety Issue Resolution Project	129,542	34,070	28,636	19,900	26,691	20,245	9/30/05
Hanford	RL-TW03	Tank Farms Operations	936,753	146,581	112,527	120,823	151,972	404,850	9/30/07
Hanford	RL-TW04	Retrieval Project	5,858,843	21,743	56,917	64,414	55,113	5,660,656	9/30/46
Hanford	RL-TW05	Process Waste Support	1,263,443	5,272	18,158	2,168	10,241	1,227,604	9/30/28
Hanford	RL-TW08	Process Waste Privatization Infrastructure	2,947,837	2,145	0	18,400	18,914	2,908,378	9/30/36
Hanford	RL-TW09	Immobilized Tank Waste Storage & Disposal Project	17,897,748	1,902	10,776	9,200	7,652	17,868,218	9/30/46
Hanford	RL-TW10	TWRS Management Support	265,501	27,542	38,087	34,217	38,320	127,335	9/30/05
Hanford	RL-WM01	Spent Nuclear Fuels Project	872,751	170,035	152,887	170,400	190,955	188,474	9/30/03
Hanford	RL-WM02	Canister Storage Building Operations	885,608	0	0	0	0	885,608	9/30/46
Hanford	RL-WM03	Solid Waste Storage and Disposal	1,781,594	26,631	31,551	34,851	36,919	1,651,642	9/30/46
Hanford	RL-WM04	Solid Waste Treatment	2,256,844	40,991	30,134	22,089	25,359	2,138,271	9/30/35
Hanford	RL-WM05	Liquid Effluents Project	1,397,075	35,689	30,378	29,359	30,988	1,270,661	9/30/32
Hanford	RL-WM06	Analytical Services	1,960,142	29,722	28,518	26,801	26,734	1,848,367	9/30/46
Hanford	RL-VZ01	Site-Wide Groundwater/Vadose Zone Integration Project	TBD	0	0	6,700	11,325	TBD	TBD
Hanford	HQNP-SI01-LT-RL	Security Investigations	TBD	0	0	791	807	TBD	TBD
Subtotal, Richland				982,052	951,397	998,492	1,065,111		

**Rocky Flats**

RFETS	RF001	Buffer Zone Closure Project	247,135	17,003	13,606	13,646	10,185	192,695	9/30/10
RFETS	RF002	Waste Management Project	1,143,776	39,978	56,508	68,122	79,775	899,393	9/30/10
RFETS	RF003	Remediation Waste & Contingent Storage Project	10,437	0	-9	1	0	10,445	9/30/10
RFETS	RF004	SNM Capital Support Project	17,339	6,578	9,463	2,477	3,930	See below <sup>a</sup>	9/30/01

<sup>a</sup> EM is refining the life-cycle cost estimate for this project based upon the current and historic levels of appropriations and the resulting unappropriated balance.



(dollars in thousands)

Ops Office/ Installation	Project Number	Project Name	Costs	Budget Authority					Planned Compl. Date
			EM Baseline (current \$) <sup>a</sup> 1997-2070	Prior Year (FY 1997)	FY 1998 Current Approp	FY 1999 Current Approp	FY 2000 Request	Unapprop- riated Balance	
RFETS	RF005	IAEA Project	1,262	175	0	0	0	1,087	9/30/04
RFETS	RF006	SNM Consolidation Project	54,151	6,150	3,008	2,234	1,287	41,472	11/1/13
RFETS	RF007	New Pu Interim Storage Vault	1,644	1,627	17	0	0	0	9/30/97
RFETS	RF008	Pu Metals and Oxides Stabilization	66,238	5,832	7,206	15,603	14,593	23,004	9/30/04
RFETS	RF009	Pu Solid Residue Stabilization Project	476,016	38,704	56,263	49,888	64,882	266,279	9/30/03
RFETS	RF010	Pu Liquid Stabilization	41,561	10,470	12,473	8,672	0	9,946	9/30/99
RFETS	RF011	Uranium Disposition Project	12,692	11,158	587	1,048	0	See below <sup>a</sup>	6/1/99
RFETS	RF012	SNM Shipping Project	27,769	1,470	3,475	7,166	17,166	See below <sup>a</sup>	9/30/04
RFETS	RF013	Closure Caps Project	81,993	0	0	30	0	81,963	9/30/10
RFETS	RF014	Industrial Zone Closure Project	330,224	24,968	22,269	23,127	19,799	240,061	9/1/09
RFETS	RF015	Miscellaneous Production Zone Cluster Closure Project	136,502	14,690	8,828	11,488	14,969	86,527	9/30/09
RFETS	RF016	Building 371 Cluster Closure Project	334,913	20,944	15,930	19,384	20,014	258,641	9/1/08
RFETS	RF017	Building 707/750 Cluster Closure Project	242,388	18,204	16,942	19,880	18,669	168,693	9/30/08
RFETS	RF018	Building 771/774 Cluster Closure Project	207,231	21,183	19,097	20,524	20,764	125,663	9/30/06
RFETS	RF019	Building 776/777 Cluster Closure Project	236,832	12,002	12,728	16,058	15,486	180,558	9/1/07
RFETS	RF020	Building 881 Cluster Closure Project	92,268	5,316	5,064	5,083	4,542	72,263	9/30/08
RFETS	RF021	Building 991 Cluster Closure Project	17,001	1,119	1,048	1,471	1,146	12,217	9/30/05
RFETS	RF022	Building 779 Cluster Closure Project	21,117	6,309	19,561	20,495	7,200	See below <sup>a</sup>	9/30/00
RFETS	RF023	Utilities and Infrastructure Project	703,734	48,131	41,906	40,574	41,905	531,218	9/30/10
RFETS	RF024	Safeguards and Security Project	412,003	8,864	36,792	45,002	43,531	277,814	9/1/10
RFETS	RF025	Infrastructure Improvement/Replacement Project	84,685	0	19,907	17,782	8,026	38,970	9/30/02
RFETS	RF027	Analytical Services Project	83,327	12,827	9,957	7,122	7,807	45,614	9/30/10
RFETS	RF029	Rocky Flats Field Office - DOE Mgmt	742,156	34,888	20,797	17,855	18,800	649,816	9/1/09
RFETS	RF030	K-H Project Management	1,359,719	118,795	122,949	127,068	120,731	870,176	9/30/10
RFETS	RF034	Management Project	TBD	0	95,728	94,452	100,725	TBD	TBD
RF Ops	HQNP-SI01-CL	Security Investigations (Closure)	TBD	0	0	948	1,278	TBD	TBD
Subtotal, Rocky Flats				487,385	632,100	657,200	657,210		

<sup>a</sup> EM is refining the life-cycle cost estimate for this project based upon the current and historic levels of appropriations and the resulting unappropriated balance.

(dollars in thousands)

			Costs	Budget Authority					
Ops Office/ Installation	Project Number	Project Name	EM Baseline (current \$) <sup>a</sup> 1997-2070	Prior Year (FY 1997)	FY 1998 Current Approp	FY 1999 Current Approp	FY 2000 Request	Unappropriated Balance	Planned Compl. Date
<b><u>Savannah River</u></b>									
SRS	SR-DO02	WSI Landlord Project	2,572,557	47,488	52,600	54,375	54,475	2,363,619	TBD
SR Ops	SR-DO03	Savannah River Natural Resource Management and Research Institute	269,695	9,211	7,800	6,379	7,038	239,267	TBD
SR Ops	SR-DO04	Ecology Lab Project	349,597	9,286	8,600	7,896	8,084	315,731	TBD
SR Ops	SR-DO05	DOE External Program Support	300,424	3,525	5,718	6,155	6,150	278,876	TBD
SR Ops	SR-DO07	DOE Program Support	319,009	7,841	5,999	10,923	7,208	287,038	9/1/28
SRS	SR-ER01	Flood Plain Swamp Project	145,863	22,795	5,543	8,482	6,112	102,931	4/9/09
SRS	SR-ER02	Four Mile Branch Project	382,494	17,245	28,372	25,140	35,379	276,358	6/12/15
SRS	SR-ER03	Lower Three Runs & Operations Project	956,217	5,195	4,385	20,137	26,603	899,897	6/12/15
SRS	SR-ER04	Pen Branch Project	100,765	3,067	10,043	6,866	8,984	71,805	12/22/11
SRS	SR-ER05	Steel Creek Project	114,311	840	2,431	7,451	3,316	100,273	12/8/10
SRS	SR-ER06	Upper Three Runs Project	570,477	23,139	22,091	20,115	15,879	489,253	9/11/17
SRS	SR-ER07	Program Management	296,940	30,420	23,845	11,500	13,470	217,705	9/30/38
SRS	SR-ER08	Facility Disposition Program Planning	93,928	0	0	0	0	93,928	9/1/28
SRS	SR-ER09	HWCTR Projects	9,140 <sup>a</sup>	4,206	4,248	0	0	0	9/1/98
SRS	SR-FA02	F Canyon Deactivation Project	101,300	0	0	522	537	100,241	9/30/15
SRS	SR-FA03	FB Line Deactivation Project	49,000	0	0	0	0	49,000	9/1/15
SRS	SR-FA04	H Canyon Deactivation Project	84,490	0	0	0	0	84,490	9/1/12
SRS	SR-FA05	HB Line Deactivation Project	33,930	0	0	0	0	33,930	9/1/12
SRS	SR-FA06	235-F Deactivation Project	92,556	0	0	0	0	92,556	9/1/13
SRS	SR-FA07	Old HB Line Deactivation Project	22,291	0	0	0	0	22,291	9/30/10
SRS	SR-FA08	P Reactor Deactivation Project	15,871	673	0	0	0	15,198	6/1/12
SRS	SR-FA09	C Reactor Deactivation Project	15,871	2,468	0	0	0	13,403	6/1/12
SRS	SR-FA10	R Reactor Deactivation Project	18,055	5,832	0	0	0	12,223	6/1/12
SRS	SR-FA11	K Reactor Deactivation Project	16,172	0	0	0	0	16,172	6/1/12
SRS	SR-FA12	L Reactor Deactivation Project	16,804	0	0	0	0	16,804	6/1/15
SRS	SR-FA13	RBOF Deactivation Project	12,156	0	0	0	0	12,156	9/1/15
SRS	SR-FA14	D Area Deactivation Project	7,952	0	0	0	0	7,952	9/1/11
SRS	SR-FA15	M Area Deactivation Project	13,895	5,720	0	0	0	8,175	9/1/11
SRS	SR-FA16	F-Area Monitoring	4,287,988	2,569	1,545	738	444	4,282,692	9/1/70

<sup>a</sup> This includes \$686K of carryover from prior year appropriations that will be costed and is therefore included in the EM baseline cost but is not reflected in the budget authority amounts shown here.

(dollars in thousands)

Ops Office/ Installation	Project Number	Project Name	Costs	Budget Authority					Planned Compl. Date
			EM Baseline (current \$) <sup>a</sup> 1997-2070	Prior Year (FY 1997)	FY 1998 Current Approp	FY 1999 Current Approp	FY 2000 Request	Unapprop- riated Balance	
SRS	SR-FA17	H-Area Monitoring & Minor Facility Monitoring	2,589,106	0	0	2,764	4,713	2,581,629	9/1/70
SRS	SR-FA18	M Area Monitoring Project	448,928	6,400	23,692	11,103	8,087	399,646	9/1/70
SRS	SR-FA19	D Area Monitoring Project	68,794	0	0	0	1,261	67,533	9/1/70
SRS	SR-FA20	Reactors Monitoring Project	2,114,012	2,486	8,582	10,081	13,566	2,079,297	9/1/70
SRS	SR-FA22	RBOF Monitoring Project	253,773	0	0	0	0	253,773	9/1/70
SRS	SR-HL01	H-Tank Farm	2,561,414	92,021	85,756	91,516	87,851	2,204,270	9/1/24
SRS	SR-HL02	F-Tank Farm	1,585,667	47,234	51,347	57,479	60,737	1,368,870	9/1/21
SRS	SR-HL03	Waste Removal Ops & Tank Closure	1,337,632	26,865	1,603	3,099	1,943	1,304,122	9/1/26
SRS	SR-HL04	ITP/ESP/LW Operations	3,636,322	75,965	75,233	48,374	58,446	3,378,304	9/1/24
SRS	SR-HL05	Vitrification	5,672,104	133,158	126,864	131,959	126,614	5,153,509	9/1/24
SRS	SR-HL06	Glass Waste Storage	206,178	0	324	599	368	204,887	9/1/26
SRS	SR-HL07	Effluent Treatment Facility	822,282	22,941	17,900	16,539	17,580	747,322	10/1/25
SRS	SR-HL08	Saltstone	708,395	10,803	8,096	1,102	1,222	687,172	9/1/24
SRS	SR-HL09	Tank Farm Services Upgrades	13,424	5,017	3,660	1,099	0	3,648	9/30/99
SRS	SR-HL10	H-Tank Farm Storm Water System Upgrades	12,004	0	1,110	3,633	4,430	2,831	9/30/00
SRS	SR-HL11	Tank Farm Support Services F Area	33,306	0	0	3,243	4,314	25,749	12/1/01
SRS	SR-HL12	HLW Removal	1,177,273	2,131	23,923	22,874	14,433	1,113,912	9/1/23
SRS	SR-HL13	Salt Disposition	TBD	0	0	12,983	42,129	TBD	TBD
SRS	SR-IN01	Plantwide Fire Protection Line Item	29,466	0	1,257	1,490	637	26,082	9/1/00
SRS	SR-IN02	Operations Support Facility Line Item	11	0	4,760	0	0	See below <sup>a</sup>	TBD
SRS	SR-IN03	Plant Maintenance Line Item	1,821	154	0	0	0	1,667	9/30/97
SRS	SR-IN04	Domestic Water Line Item	7,811 <sup>b</sup>	1,847	540	0	0	0	3/1/98
SRS	SR-IN05	CFC HVAC Chiller Retrofit	45,397	10,271	10,287	9,702	2,043	13,094	9/1/01
SRS	SR-IN06	Radio Trunking System Line Item	8,243 <sup>b</sup>	350	230	0	0	0	7/1/98
SRS	SR-IN07	Site Road Infrastructure Line Item	246	4,224	2,776	0	0	See below <sup>a</sup>	9/30/98
SRS	SR-IN08	High Level Drain Lines Line Item	1,417 <sup>b</sup>	0	476	0	0	0	11/1/98
SRS	SR-IN09	Health Physics Support Line Item	4,916 <sup>b</sup>	2,957	0	0	0	0	9/1/98
SRS	SR-IN10	Regulatory Monitoring and Bioassay Lab	33,620	2,894	6,103	7,542	12,994	4,087	3/31/01
SRS	SR-IN11	Infrastructure Line Item	371,473	0	0	1,274	200	369,999	9/30/28
SRS	SR-IN12	Operating Projects	1,131,333	5,123	10,207	18,246	32,693	1,065,064	9/30/28

<sup>a</sup> EM is refining the life-cycle cost estimate for this project based upon the current and historic levels of appropriations and the resulting unappropriated balance.

<sup>b</sup> Includes costs incurred prior to FY 1997.

(dollars in thousands)

Ops Office/ Installation	Project Number	Project Name	Costs	Budget Authority					Planned Compl. Date
			EM Baseline (current \$) <sup>a</sup> 1997-2070	Prior Year (FY 1997)	FY 1998 Current Approp	FY 1999 Current Approp	FY 2000 Request	Unappropri- ated Balance	
SRS	SR-IN13	Decontamination of Lab Facilities, 772-F & 773-A	12,970	0	0	0	2,774	10,196	7/1/02
SRS	SR-NM01	F-Area Stabilization Project	1,267,153	171,688	173,799	181,939	206,565	533,162	9/30/03
SRS	SR-NM02	H-Area Stabilization Project	1,396,155	140,262	132,816	136,304	152,651	834,122	9/30/05
SRS	SR-NM03	Nuclear Material Storage Line Item	187,586	11,374	21,292	90,060	7,505	57,355	4/30/02
SRS	SR-NM04	Canyon Exhaust Line Item	9,828	495	1,826	5,819	0	See below <sup>a</sup>	10/1/99
SRS	SR-NM06	Nuclear Materials Storage	892,600	0	0	0	0	892,600	10/1/28
SRS	SR-SF01	K-Reactor Spent Nuclear Fuel Project	86,918	31,680	29,393	25,845	0	n/a	n/a
SRS	SR-SF01-LT	K-Reactor Spent Nuclear Fuel Project (Post 2006)	111,533	0	0	0	33,410	78,123	TBD <sup>b</sup>
SRS	SR-SF02	L-Reactor Spent Nuclear Fuel Project	512,568	21,521	20,108	31,826	36,187	402,926	9/1/11
SRS	SR-SF03	RBOF Spent Nuclear Fuel Project	378,177	15,373	19,155	18,206	11,773	313,670	9/1/12
SRS	SR-SF04	Heavy Water - D Area	41,972	14,699	16,133	11,140	0	n/a	n/a
SRS	SR-SF04-LT	Heavy Water - D Area (Post 2006)	49,187	0	0	0	4,984	44,203	TBD <sup>b</sup>
SRS	SR-SF06	Alternate Technology Project	33,533	10,169	4,592	3,985	3,723	See below <sup>a</sup>	9/1/06
SRS	SR-SF07	Disassembly Basin Upgrade Line Item	10,053	7,662	2,470	114	0	See below <sup>a</sup>	9/30/98
SRS	SR-SF09	Spent Nuclear Fuel Treatment and Storage	1,760,147	2,732	950	1,455	11,500	1,743,510	9/1/35
SRS	SR-SW01	Consolidated Incinerator Facility	1,198,371	31,224	24,873	23,255	26,045	1,092,974	9/30/30
SRS	SR-SW02	Transuranic Waste Project	965,961	9,733	9,220	13,991	10,602	922,415	9/30/29
SRS	SR-SW03	Mixed Low Level Waste Project	357,514	7,526	2,854	4,994	5,845	336,295	9/30/32
SRS	SR-SW04	Low Level Waste Project	441,288	7,995	8,602	12,150	9,947	402,594	3/31/29
SRS	SR-SW05	Hazardous Waste Project	126,336	6,477	5,468	4,901	3,971	105,519	9/1/24
SRS	SR-SW06	Sanitary Waste Project	64,914	3,197	1,747	2,068	2,156	55,746	9/1/32
SRS	SR-SW07	Pollution Prevention	114,669	0	4,679	1,710	1,122	107,158	9/1/24
SR Ops	HQNP-SI01-LT-SR	Security Investigations	TBD	0	0	1,804	1,800	TBD	TBD
Subtotal, Savannah River				1,148,168	1,127,923	1,214,946	1,222,500		

<sup>a</sup> EM is refining the life-cycle cost estimate for this project based upon the current and historic levels of appropriations and the resulting unappropriated balance.

<sup>b</sup> A change in mission requires this project to be moved from the Site/Project Completion program account to the Post-2006 Completion account.

(dollars in thousands)

			(Dollars in thousands)						
Ops Office/ Installation	Project Number	Project Name	Costs	Budget Authority					Planned Compl. Date
			EM Baseline (current \$) <sup>a</sup> 1997-2070	Prior Year (FY 1997)	FY 1998 Current Approp	FY 1999 Current Approp	FY 2000 Request	Unappropri- ated Balance	
<b>Multi-Site</b> <sup>a</sup>									
HQ	HQ-6002	Support to Transition Activities	TBD	7,462	5,823	2,735	3,617	TBD	TBD
HQ	HQ-EM74	Headquarters Program Integration	130,379	10,448	9,182	8,108	9,081	93,560	TBD
HQ	HQ-100-AA	Technical Support to ER	TBD	3,504	8,672	720	690	TBD	TBD
HQ	HQ-2-00	Technical Support to ER (Non-Def)	TBD	9,321	5,193	5,418	5,304	TBD	TBD
HQ	HQ-WM001	Complex-Wide Waste Management Support and Analyses	TBD	4,146	14,851	2,728	2,610	TBD	TBD
Multi-Site	HQ-PM-001	Policy & Management	TBD	23,155	19,738	27,533	23,190	TBD	TBD
Multi-Site	HQNP-NCST	Nuclear Criticality Safety Training	TBD	0	0	3,000	3,750	TBD	TBD
Multi-Site	OPS/HQ-PP	Pollution Prevention	188,020	23,153	23,575	12,790	7,138	121,364	10/1/10
Multi-Site	OPS/HQ-PP-N	Pollution Prevention (Non-Def)	TBD	1,341	897	100	100	TBD	10/1/10
Multi-Site	HQ-TMHQ1	Transportation and Packaging Mgmt	887,456	12,764	10,509	11,918	11,753	840,512	9/30/70
Multi-Site	ID-CMP-001	National Analytical Mgmt Program	TBD	5,817	5,205	3,000	3,000	TBD	TBD
Multi-Site	HQ-EM-HQ-001	Emergency Preparedness Program	TBD	3,484	3,259	3,218	2,849	TBD	TBD
Multi-Site	HQ-EM75	Environmental & Regulatory Analysis	11,388	733	1,501	518	300	8,336	TBD
Multi-Site	HQ-PC-001	Packaging Certification	TBD	0	4,648	3,756	3,716	TBD	TBD
Subtotal, Multi-Site				105,328	113,053	85,542	77,098		
n/a	HQ-9999-01	Contribution to the UE D&D Fund	TBD	376,648	388,000	398,088	420,000	TBD	TBD
HQ	HQ-4000	Reimbursements to Uranium/Thorium Licensees	TBD	34,000	40,000	30,000	30,000	TBD	TBD
Various Loc	multiple	Science and Technology	3,322,500	351,919	269,213	243,156	230,500	2,227,712	9/30/20
Various Loc	HQ-PD-XX	Program Direction	13,203,701	411,011	345,000	337,073	349,409	11,761,208	TBD

<sup>a</sup> EM is refining the life-cycle cost estimates for all Multi-Site projects.

(dollars in thousands)

			Costs	Budget Authority					
Ops Office/ Installation	Project Number	Project Name	EM Baseline (current \$) <sup>a</sup> 1997-2070	Prior Year (FY 1997)	FY 1998 Current Approp	FY 1999 Current Approp	FY 2000 Request	Unappropriated Balance	Planned Compl. Date
Subtotal, EM . . . . .				6,222,896	6,020,367	6,008,525	6,120,000		
D&D Fund Deposit (Offset) . . . . .				-376,648	-388,000	-398,088	-420,000		
Use of Prior Year Balances . . . . .				-177,055	-11,253	-20,658	0		
Pension Refund Offset . . . . .				-8,000	0	0	0		
Y2K Supplemental Appropriation . . . . .				0	0	13,840	0		
FFTF (transferred to NE in FY 1999) . . . . .				0	41,727	0	0		
Total, Traditional Budget Authority . . . . .				5,661,193	5,662,841	5,603,619	5,700,000		
Privatization . . . . .				330,000	200,000	228,357	228,000		
Total, EM . . . . .				<u>5,991,193</u>	<u>5,862,841</u>	<u>5,831,976</u>	<u>5,928,000</u>		

# **Defense Environmental Restoration and Waste Management**

## **Program Mission**

The Environmental Management (EM) program is responsible for managing and addressing the environmental legacy resulting from the production of nuclear weapons and nuclear research. The nuclear weapons complex generated waste, pollution, and contamination which pose unique problems, including unprecedented volumes of contaminated soil and water, radiological hazards from special nuclear material, and a vast number of contaminated structures. Factories, laboratories, and thousands of square miles of land were devoted to the enterprise of producing tens of thousands of nuclear weapons in the name of national security. Much of this massive infrastructure, waste, and contamination still exists and is largely maintained, decommissioned, managed, and remediated by the EM program, which is sometimes referred to as the "cleanup program." EM's responsibilities include facilities and areas at 113 geographic sites (excluding the 21 sites in the Formerly Utilized Sites Remedial Action Project transferred to the U.S. Army Corps of Engineers). These sites are located in 30 states and one territory and occupy an area equal to that of Rhode Island and Delaware combined -- or about 2 million acres.

The FY 2000 request for the Defense Environmental Restoration and Waste Management appropriation is \$4,494,376,000, an increase of \$185,809,000 from the FY 1999 current appropriation level of \$4,308,567,000.

## **Program Goal**

The EM program has established a goal of cleaning up as many of its contaminated sites as possible by 2006 in a safe and cost-effective manner. By working towards this goal, EM can reduce the hazards presently facing its workforce and the public, and reduce the financial burden on the taxpayer. The FY 2000 budget request continues to reflect the program's emphasis on site closure and project completion.

## **Program Objectives**

- # Continue to address the most serious environmental risks across the DOE complex and ensure that facilities and activities pose no undue risks to the public and worker safety and health.
- # Continue to be substantially in compliance with applicable environmental and other requirements and meet compliance milestones.
- # Continue surveillance and maintenance of facilities.

## Performance Measures

EM has moved aggressively towards developing and implementing a performance-based budget that clearly demonstrates the program and project results expected for the resources requested. Building upon past experience, the FY 2000 budget was enhanced by aligning performance measures by project within the specific appropriation and program accounts. These performance measures can be found in the site details that follow.

## Significant Accomplishments and Program Shifts

The FY 2000 budget request fully reflects the project-oriented structure that EM has developed as a key component of the effort to accelerate cleanup and reduce costs. All EM activities have been organized into projects which have a defined scope, schedule, cost, and end state. Through the strategies identified in the *Accelerating Cleanup: Paths to Closure* document, EM sites are working to sequence projects and track progress, thereby reducing life-cycle costs and schedules. Specific accomplishments and program shifts may be found in the site details that follow.

### Funding by Site

(dollars in thousands)

	FY 1998	FY 1999	FY 2000	\$ Change	% Change
<b>Albuquerque Operations Office</b>					
Albuquerque Operations Office . . . . .	18,120	8,080	5,550	-2,530	-31.3%
Grand Junction Office . . . . .	8,000	1,200	1,200	0	0.0%
Kansas City Plant . . . . .	3,513	1,756	1,100	-656	-37.4%
Los Alamos National Laboratory . . . . .	130,340	79,963	104,834	24,871	31.1%
Pantex Plant . . . . .	23,243	11,299	15,000	3,701	32.8%
Pinellas Plant . . . . .	2,318	2,797	5,500	2,703	96.6%
Sandia National Laboratories . . . . .	48,368	27,260	19,435	-7,825	-28.7%
<b>Total, Albuquerque Operations Office . . . . .</b>	<b>233,902</b>	<b>132,355</b>	<b>152,619</b>	<b>20,264</b>	<b>15.3%</b>
<b>Carlsbad Area Office</b>					
Waste Isolation Pilot Plant . . . . .	173,700	185,404	186,404	1,000	0.5%
<b>Chicago Operations Office</b>					
Ames Laboratory . . . . .	103	0	0	0	0.0%
Argonne National Laboratory-East . . . . .	4,153	0	0	0	0.0%
Chicago Operations Office . . . . .	241	0	0	0	0.0%
<b>Total, Chicago Operations Office . . . . .</b>	<b>4,497</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.0%</b>



(dollars in thousands)

	FY 1998	FY 1999	FY 2000	\$ Change	% Change
Idaho Operations Office					
Idaho National Engineering and Environmental Laboratory .....	408,055	425,615	400,214	-25,401	-6.0%
Nevada Operations Office					
Nevada Operations Office .....	3,933	7,036	8,634	1,598	22.7%
Nevada Test Site .....	64,985	73,045	76,673	3,628	5.0%
Total, Nevada Operations Office .....	68,918	80,081	85,307	5,226	6.5%
Oakland Operations Office					
Lawrence Livermore National Laboratory	54,210	49,214	49,891	677	1.4%
Oakland Operations Office .....	2,192	2,700	800	-1,900	-70.4%
Separations Process Research Unit	0	0	500	500	>999%
Total, Oakland Operations Office .....	56,402	51,914	51,191	-723	-1.4%
Oak Ridge Operations Office					
Oak Ridge National Laboratory .....	7,920	0	57,805	57,805	>999%
Oak Ridge Operations Office .....	398	3,559	4,725	1,166	32.8%
Oak Ridge Reservation .....	190,039	164,029	186,622	22,593	13.8%
Off-site Locations .....	26,468	9,168	15,409	6,241	68.1%
Total, Oak Ridge Operations Office .....	224,825	176,756	264,561	87,805	49.7%
Richland Operations Office					
Hanford Site .....	887,808	951,138	1,026,862	75,724	8.0%
Richland Operations Office .....	44,536	45,491	36,831	-8,660	-19.0%
Total, Richland Operations Office .....	932,344	996,629	1,063,693	67,064	6.7%
Savannah River					
Savannah River Operations Office .....	28,117	33,157	30,280	-2,877	-8.7%
Savannah River Site .....	1,095,558	1,181,789	1,192,220	10,431	0.9%
Total, Savannah River Operations Office ....	1,123,675	1,214,946	1,222,500	7,554	0.6%
Multi-Site Activities .....	102,315	76,268	67,978	-8,290	-10.9%
Science and Technology .....	269,213	243,156	230,500	-12,656	-5.2%
Program Direction .....	345,000	337,073	349,409	12,336	3.7%
D&D Fund Deposit .....	388,000	398,088	420,000	21,912	5.5%
FY 1999 activities funded by prior year bal ...	0	5,900	0	n/a	n/a

(dollars in thousands)

	FY 1998	FY 1999	FY 2000	\$ Change	% Change
Subtotal, Defense ER&WM .....	4,330,846	4,324,185	4,494,376	176,091	4.1%
Use of Prior Year Balances (to satisfy Congressional offset) .....	-11,253	-20,058	0	20,058	-100.0%
Use of Prior Year Balances (to finance FY 1999 activities) .....	0	-5,900	0	n/a	n/a
Y2K Supplemental Appropriation .....	0	10,340	0	-10,340	>999%
Total, Defense ER&WM .....	4,319,593	4,308,567	4,494,376	185,809	9.0%

**Public Law Authorization:**

Public Law 95-91, "Department of Energy Organization Act (1977)"

Public Law 103-62, "Government Performance and Results Act of 1993"

Public Law 105-245, "The Energy and Water Development Appropriations Act, Fiscal Year 1999"

Public Law 105-261, "National Defense Authorization Act, Fiscal Year 1999"

Public Law 102-579, "Waste Isolation Pilot Plant Land Withdrawal Act (1992)"